An Address
ON
THE DIAGNOSIS OF CANCER OF THE STOMACH.

BY JOHN C. HEMMETER, M.D., PHIL. D.,
PROFESSOR IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND; DIRECTOR OF THE CLINICAL LABORATORY, BALTIMORE, MARYLAND.

In all efforts at treatment of cancer of the stomach we are confronted by two relentless facts which limit our knowledge and ability. One is of a negative and the other is of a positive nature. The first barrier consists in the fact that we do not know what carcinoma is. We do not understand the nature of malignant neoplasms. The second is that no matter what our methods of treatment, regardless of at how early a date or with what skill it is executed, the cases treated will eventually and inevitably suffer from a recurrence of the disease. This is an actual fact in 99 per cent. of all gastric cancers that have undergone operation. With such a state of our knowledge we are condemned to one of three courses. "Either we merely go on to do things just as our fathers did, and for no better reasons than because they did them so; or, trusting to some personal authority, we adopt at random the recommendation of some specific in a speculative hope that it may answer; or, lastly—and this seems the most favourable case—we ourselves attempt to improve upon certain processes and methods hitherto employed." This improvement may follow as a result of accumulated experience, arranged, corrected, and amplified by master minds, or it may be the result of experimental investigation.

In our present knowledge of malignant neoplasms the analytical mind remains in the presence of phenomena the causes of which are hidden from it, but these causes are capable of being discovered and understood, just as the cause of tuberculosis and that of diphtheria were at one time unknown to us and have been shown to be capable of discovery. The only diagnosis that can be of interest to a surgeon is an *early* diagnosis. I have prefaced my remarks in the manner stated in order to emphasise the difficulty of an early diagnosis of any disease the cause of which is unknown and which does not give prompt and unmistakeable clinical manifestations. Many of us can recall the difficulty in the diagnosis of tuberculosis, diphtheria, and malaria prior to the discovery of the specific organisms which were proven to be the causes of these diseases.

Definition of the term "early diagnosis."—The nature and concept of an early diagnosis of carcinoma of the stomach is intimately associated with a knowledge of the duration of the disease, which can be approximately, though not definitely, ascertained by three methods: (1) by observing the rate of growth of carcinomas in organs that are open to direct inspection (the uterus, the rectum, the mammary glands, &c.); (2) by noting the size and rate of growth after the first beginning of the subjective and objective complaints in tumours capable of palpation; and (3) by noting the rate of growth in visible or palpable metastases. Cancer of the stomach may occur and run its entire course in a latent form. Osler and McCrae[1] report seven such cases, in all of which I fail to find any statement referring to chemical and microscopical analysis of the gastric contents. It is true the gastric symptoms were not prominent. These cases show that where we have obscure or doubtful diagnosis chemical and microscopical analyses of the gastric contents should be as indispensable as the analysis of the urine in similar cases. But latent cancer has been discovered at the necropsy in my own experience in cases in which frequent chemical analysis of the gastric contents had been made. This occurred in two cases of cancer that arose from gastric ulcers and in which the secretion of hydrochloric acid continued to the end of life and none of the classical signs and symptoms of gastric carcinoma were evident during the clinical history. Such cases, however, are exceedingly rare, and, in my opinion, cases of latent cancer of the stomach will be reported less and less the more gastric test-meal analysis is undertaken in obscure cases and the more such analysis is raised to the importance which urinary analysis occupies.

To revert to the duration of this disease, this naturally must vary with the histological nature of the neoplasm. Some neoplasms, such as the scirrhus or the colloid carcinoma, grow rather slowly and also form metastases slowly. From statistics relating to the results of operation it is evident that these two neoplasms are also the most favourable to operation.[2] On the other hand, the medullary or the adeno- or epithelial carcinoma grows more rapidly. In my experience carcinoma of the stomach has, as a rule, a latent period of from three to four months in which it does not give the classical symptoms of gastric cancer but clandestinely progresses under the guise of a chronic gastritis or nervous dyspepsia. This is an important period for the clinician. An early diagnosis means the recognition of gastric cancer during these three or four months, when he is confronted with nothing but the symptoms of chronic gastritis or nervous dyspepsia. Such a diagnosis is unfortunately only rarely possible. The first and main obstacle in the way is that arising from the indolence and procrastination of the patient, and sometimes unfortunately also of the practitioner in charge. The second obstacle is found in the fact that the methods necessary to effect such a diagnosis which are thus far available are time-robbing, requiring great patience and persistence and a knowledge of chemistry and microscopical technique only exceptionally met with or capable of application in general practice. A number of guiding principles can be formulated, as much has crystallised out of the study and investigation concerning the clinical history of cancer, which might serve the practitioner as a criterion as to the time when such cases of chronic gastritis or nervous dyspepsia should be transferred to the surgeon. But I should like to premise what I shall have to say concerning the chemical and histological technique of the early diagnosis by stating that the simple continuance of a chronic gastritis or nervous dyspepsia, in spite of logical and scientific treatment accompanied with progressive loss of body weight during from three to four weeks, are two factors which alone justify the suspicion of a latent gastric carcinoma.

The ingenuity, the immense amount of investigation, and the indefatigable perseverance which have been bestowed upon the chemical and histological methods of diagnosis of gastric carcinoma cannot but excite universal admiration. But in my experience they are of no greater help to the clinician for the recognition of this disease than are the simpler continuance or even aggravation of a chronic gastritis and progressive loss of body weight (though every other symptom and sign may be lacking) in spite of proper treatment.

I will consider *seriatim* the various clinical methods employed for the detection and recognition of carcinoma of the stomach. I will employ the right of the conservative clinician—viz., the critical faculty of determining the actual value of these aids and the deduction of practical conclusions from their association.

Age.—According to the tables of Brinton (600 cases), Welch (2075 cases), and Haberlin (11,424 cases), three-fourths of all cases of gastric cancer occur between the ages of 40 and 70 years. The factor of age should, however, be used only with the greatest caution. Of 66 cases of Lindner and Kuttner, more than one-half of the patients had not reached the fiftieth year. The same can be said of Hammerschlag's cases. I have repeatedly had the experience that general practitioners have failed to recognise cancer of the stomach on account of the youthful age of the patient. Now, Wilkinson has reported a case of congenital gastric cancer, Cullingworth one in a child five weeks old, Widerhofen a congenital cancer, and Kaulich a colloid carcinoma in a boy one and a half years old. According to Schäffer, the percentage of gastric cancers in the first three decades is 2, according to Reichert 3, and according to Bräutigam 2·5.[3] One fact which I should like to emphasise in connexion with the question of age is that the limit of age for carcinoma is gradually receding.

Diagnostic value of the subjective and objective symptoms.—Among all the dyspeptic complaints, the disturbances of the appetite, the thirst, the pressure, the distension and fulness,

[1] Philadelphia Medical Journal, Feb. 3rd, 1900.

[2] Hemmeter: Diseases of the Stomach, Section on Surgery, second edition, p. 395.

[3] Inaugural Dissertation von Reinhold Schulz, Breslau, 1896.

the eructation, the nausea and vomiting, and the irregularities of the stool, there is nothing characteristic. Thirst is a particularly prominent and a very annoying symptom in dilatations caused by pyloric carcinoma. There is nothing characteristic about the pasty, insipid taste, or about the coated tongue. The pains are not characteristic. The vomiting and nausea, when very frequent and copious, are suggestive of cancer at the pylorus of the cardia. When the two openings of the stomach are free and only the walls of the stomach are affected there is in my experience no vomiting at all. The amount that is vomited depends on the degree of dilatation. The food is unchanged.

Significance of blood and hæmatemesis.—In my experience blood is contained in the vomit of one-half of all cases of gastric cancer. Large quantities of blood are rarely vomited, but the characteristic coffee-ground vomit in consequence of stagnation and decomposition of the blood is diagnostically important. The more copious the effusion of blood is into the stomach the quicker does it cause vomiting; for that reason the abundant hæmorrhages in ulcer are often vomited uncoagulated and very little altered, whereas the smaller amounts of blood in carcinoma and gastritis remain in the stomach a longer time and then show the characteristic coffee-ground appearance. But large hæmorrhages may occur in cancer and small hæmorrhages may occur in ulcer; and I have seen cases of coffee-ground vomiting in ulcer repeatedly.

Constipation or diarrhœa.—In the literature of this subject in which any reference to these points was made I found that in 75 per cent. of cancers of the stomach there is constipation. In about 20 per cent. there is diarrhœa and in 5 per cent. only does the stool remain regular. These figures agree with those from my clinic sufficiently to make any alteration needless. F. Müller states that diarrhœa occurs in 35·5 per cent. The greater frequency of constipation is due to the mechanical stenosis by the tumour, and motor insufficiency is due to carcinomatous invasion of the muscularis.

Emaciation and cachexia.—That these symptoms are not characteristic is evident, but they are important because the degree of emaciation will greatly influence the decision on an operation. A frequent question will be, Will the strength of this patient suffice to overcome a severe abdominal operation? The general condition gives no clue to the size of the tumour. A very minute cancer, even when it is at a place where it in no way influences the functions of the body, may depress the nutrition of the entire organism and irresistibly lead to death. On the other hand, very large tumours on the walls of the stomach may run a long course without disturbance of the general strength and nutrition. So in all dyspeptic systems there is nothing pathognostic for gastric cancer. They occur not only in other diseases of the stomach but to a large extent in diseases of other organs. The swelling of the cervical lymph-glands is a very rare sign, and in my experience occurs only towards the end of the disease, by which time the diagnosis is generally clear.

Condition of the gastric functions.—Alterations in secretion, absorption, and peristalsis. (1) The secretion. During the development of cancer secretion of hydrochloric acid is generally lost, so that free hydrochloric acid can no longer be detected in the test meals. Towards the end stage both free and combined hydrochloric acid are entirely absent. It is urgently necessary to be very careful in these determinations for hydrochloric acid. A single analysis showing sub- or an-acidity proves nothing at all. If a first test fails to detect free hydrochloric acid it should be repeated after allowing a longer interval to elapse subsequently to the time at which the test meal was taken. It must be borne in mind that the gastric mucosa does not secrete hydrochloric acid all over—i.e., in all of the parts. Only the middle portion secretes it; the pyloric region does not secrete it. Although the degree of reduction of hydrochloric acid secretion depends upon the extent and gravity of the gastritis which is caused by the carcinoma, nevertheless this may be limited to the pyloric region, where it will not interfere with the glandular apparatus which forms the hydrochloric acid. F. Mall[4] concludes with Heidenhain that the oxyntic or border cells in the peptic ducts are concerned in the production of hydrochloric acid and the central cells in the production of pepsin. Now as the pyloric region contains no border cells a carcinoma may reach as far as the antrum pylori, a distance of from three to five inches, before it will invade the region which contains the acid or border cells. I have seen six cases in which the presence of free hydrochloric acid continued to the end of life. In two of these cases the carcinoma was seen during the operation and in the remaining four at the necropsies. These six cases had not originated on the basis of an old gastric ulcer, but were circumscribed knots of cancer, leaving the mucosa largely intact. In all carcinomas that have arisen from ulcers free hydrochloric acid in normal or even in increased amounts may continue until death. This is sufficient evidence for the conclusion that the presence of free hydrochloric acid does not argue against cancer of the stomach. On the other hand, absence of free hydrochloric acid is no specific sign of this disease. It occurs in other gastric diseases leading to atrophy; it may occur in diseases of other organs—for instance, diseases of the kidneys, pulmonary tuberculosis, and valvular cardiac diseases, and, as I have shown,[5] free hydrochloric acid is frequently absent, though not necessarily so, in catarrhal jaundice. When free hydrochloric acid is absent combined hydrochloric acid may still be present; and Schüle argued that the amount of hydrochloric acid deficit was an important diagnostic sign between cancerous and benign diseases of the stomach.

In determining the amount of hydrochloric acid deficit decinormal hydrochloric acid solution is added to the filtrate of gastric contents until we get a distinct reaction with the Boas resorcin test or any of the other established tests for free hydrochloric acid. The degree of the deficit is, in my experience, no indication of the extent of the atrophy of the secreting apparatus. Very large hydrochloric acid deficits have been discovered by myself in benign diseases of the stomach. The determinations for hydrochloric acid, however, when taken in conjunction with other symptoms and signs, have a certain limited diagnostic significance.

Secretion of pepsin and chymosin or rennin.—As a rule, the reduction of the secretion of these ferments goes parallel with a reduction of the hydrochloric acid secretion. For clinical purposes the determination of the presence and strength of the pepsin secretion may be made according to the method of Hammerschlag,[6] though this method from a chemical standpoint is by no means exact. Hammerschlag used the Esbach albuminometer to determine the amount of albumin which has not been digested by the pepsin of the gastric contents. As this method is not exact when used for urinary analysis it is less so for this purpose. Still, as a rough clinical test it generally suffices. A 1 per cent. solution of albumin containing free hydrochloric acid to the amount of 4 per 1000 is filled into the Esbach albuminometer to the 10 cubic centimetres mark. To this tube we add five cubic centimetres of the gastric filtrate to be tested for pepsin. A second Esbach albuminometer is filled to the 10 cubic centimetres mark with the standard egg albumin and hydrochloric acid solution, and as a control test five cubic centimetres of distilled water are added. Both tubes are now put in the incubator at a temperature of 37° C. for one hour. Then the amount of albumin in each is determined by the Esbach reagent. After both tubes have been allowed to stand quietly for 24 hours the amount of digested albumin can easily be calculated in numbers expressing the percentage. This test is not sufficiently delicate to demonstrate small amounts of pepsinogen. The reduction of the chymosin or rennin occurs in all gastric carcinomas except those arising from gastric ulcers, but very marked reduction of the amounts of both ferments is in itself not a characteristic sign for gastric cancer, because it can occur in atrophy of the mucosa from gastritis and also from long-standing diseases of other organs.

Lactic acid.—In 112 cases of carcinoma of the stomach I found only three in which lactic acid was present to any considerable degree before the diagnosis could be made by other symptoms. The frequent occurrence of lactic acid in gastric cancer has been asserted by Boas to be an important diagnostic sign. The question is, Does it occur at a time to enable us to make an early diagnosis? This I must deny on the basis of a large experience with this test. Boas has admitted that excessive lactic acid in the stomach contents is not a pathognostic sign of cancer of the stomach because it is absent in a number of cases of that disease and may be present in gastric diseases of a benign type and even during diseases of other organs. Three conditions are necessary,

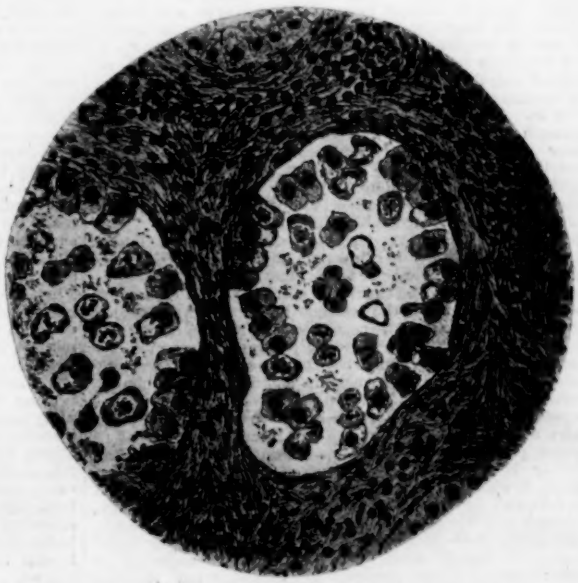
[4] Johns Hopkins Hospital Reports, vol. i.

[5] Hemmeter, op. cit., p. 374.

[6] Archiv für Verdauungskrankheiten, vol. ii., p. 4.

possibly four, to bring about excessive formation of lactic acid in the stomach. These are: (1) impaired gastric motility; (2) absence of hydrochloric acid secretion; (3) reduction of albumin digestion; and (I should add) (4) an impaired absorption. Lactic acid is formed in the stomach by the action of lactic-acid bacilli on the carbohydrates. Sticker has shown that the simple passage of carbohydrates through the mouth causes the formation of more or less lactic acid without exception. It is therefore necessary to give a test meal which shall be as far as practicable free from lactic acid and which shall form little of this substance during the passage through the mouth. Such a test meal has been introduced by Boas in the form of his oat-flour soup (one ounce of Knorr's oat flour boiled in a quart of water, evaporated down to one pint and seasoned with salt only). Lactic acid will not form in the stomach in amounts demonstrable by Uffelman's test, even though the contents stagnate due to arrest of the peristalsis, provided the proteid digestion is still fairly good and does not fall below 75 per cent. Whenever there is much lactic acid in the stomach the proteid digestion will be found to be below 75 per cent. I have made a number of chemical tests relative to the relation of lactic acid to proteolysis and have confirmed the view that lactic acid may replace the normal hydrochloric acid in this transformation. In the contents of some carcinomatous stomachs the lactic acid was found to be in combination with the proteid of the food. When the mucosa is still capable of secreting hydrochloric acid this will combine with the albumin sooner than the weaker acid, hence a fairly good albumin digestion signifies still a trace of hydrochloric acid and ferments. But a fairly good albumin digestion can be effected by lactic acid and pepsin in the absence of hydrochloric acid. This chemical fact merits closer investigation. Normally lactic acid, like all other soluble products of digestion, is absorbable. If, therefore, the absorption is made difficult, which occurs especially when the contents stagnate and the hydrochloric secretion is depressed, the conditions favourable to lactic acid accumulation will be present. Whenever the movements of the stomach are normal, so that the contents can be expressed into the duodenum within six or seven hours, lactic acid will not develop to a degree that can be recognised by the ordinary tests, although the hydrochloric acid secretion has been lost entirely. Hammerschlag took such a gastric chyme containing no hydrochloric acid, but from stomachs with normal motility, and added the third necessary factor—viz., stagnation—by letting it stand at room temperature. Under such stagnation lactic acid rapidly developed in the chyme. In gastric carcinoma we have the conditions favourable to lactic acid formation in the majority of cases—vide suppression of hydrochloric acid, stagnation of contents, impaired proteid digestion, and impaired absorption—so that lactic acid is found most frequent in cancer of the stomach. Rosenheim found it in 78 per cent., Lindner and Kuttner found it in 60 per cent., Strauss found it in 91 per cent., and I have found it in 82 per cent. of all my cases of gastric cancer. But the conditions necessary to its formation in the stomach can be brought about by diseases other than cancer; for instance, in benign pyloric stenosis, in atrophic gastritis with motor insufficiency, and even in diseases of other organs I have discovered lactic acid in the stomach in marked excess when the stomach itself was not affected, but the impaired peristalsis was caused in one case by a pancreatic cyst, in another by a carcinoma of the gall-bladder, and in a third case by a large gall-stone. These conditions had caused compression of the duodenum effecting obstruction to the outlet of gastric chyme with a subsequent gastritis, the latter most probably causing the loss of hydrochloric acid secretions. In still another case in which there was a compression of the duodenum by floating kidney the presence of lactic acid was only transient. Whenever the kidney could be retained in place by a proper bandage the stomach resumed its secretions partially and the peristalsis was to a degree resumed, and the lactic acid, except in minute traces, disappeared from the contents. Lactic acid, then, although it is not an early sign, is a clinically important one. It means absence of hydrochloric acid, stagnation, and reduction of the digestive ferments and loss of absorption—conditions which are most frequently found in cancer, and therefore the presence of lactic acid, although not a pathognomonic sign, nevertheless, when it occurs in conjunction with other symptoms, should suggest the probability of cancer. The test necessary for this which is most practical is the one originally suggested by Uffelman. The reagent consists of 10 cubic centimetres of a 4 per cent. solution of carbolic acid, 20 cubic centimetres of distilled water, and one drop of the liquor of the sesquichloride of iron. This gives an amethyst-blue solution. The presence of lactic acid changes this to a yellowish green. The reagent is sensitive to 0·5 per 1000 of lactic acid, which amount is always pathological and of diagnostic significance. Tests more sensitive than this would not be useful clinically. Boas[7] has given an exact method for quantitative determination. Strauss[8] has devised a practical little funnel for separating the lactic acid by agitation with ether.[9]

FIG. 1.



Fragment of gastric mucosa obtained by curettage from case O. A. B., showing lumen of two gland tubules. The interglandular connective tissue is thickened and permeated with small, round-celled filtration. The greater portion of the epithelium of the gland is detached; many cells show vacuoles, some of them so large as to submerge the identity of the original cell, which appears either as a small rim of protoplasm around a vacuole or as a smaller mass at the side of a huge vacuole. Numerous gland cells in the state of atypical mitosis. There are in both glands lumens, asymmetrical mitoses, some with disrupted chromosomes. In the centre of one lumen is a four-lobed cell presenting four nuclei. Asymmetrical mitoses do not derive their name from asymmetry in shape or configuration; an asymmetrical mitosis is one whose daughter-stars do not contain a like or even number of chromosomes.

Microscopical examination of the stomach contents.—There are only two structural elements in the stomach contents that have a possible diagnostic significance. These are (1) tissue fragments, minute portions of the neoplasm; and (2) the so-called Oppler-Boas bacilli. The tissue fragments are of undoubted diagnostic value if they contain structure of the neoplasm. The question is, Do they occur early enough in the disease to make a timely diagnosis possible?

[7] Deutsche Medicinische Wochenschrift, 1893, No. 39.
[8] Berliner Klinische Wochenschrift, 1895, No. 37.
[9] For illustration see Hemmeter's Diseases of the Stomach, second edition, p. 168.

It is probable that the fragments are only detached from ulcerating tumour masses in the stomach such as have already developed metastases, but I shall describe a method—that of curetting the walls of the stomach with a soft tube and thereby loosening the superficial epithelium at a time when the neoplasm is not yet ulcerating. These fragments can be washed out of the stomach by lavage and sedimented in the electric centrifuge. I have used this method in 48 cases of gastric carcinoma, and I regard it as eminently important and adapted to early clinical diagnosis. I wish to emphasise that not only fragments of the neoplasm itself are to be sought after, but any cellular tissue that is found should be carefully stained and studied. The most remarkable feature of the sediment from such a stomach after this so-called curetting is a large number of cells presenting karyokinetic figures. Rieder[10] reported a case in which he made a diagnosis of malignant disease of the peritoneum and pleura from finding numerous cells in the exudates, showing indirect and atypic nuclear division. Mitoses occur very frequently. The forms of cell and nuclear division known as the equatorial plate and the monaster are frequent. Another form known as the anaphase, which in normal karyokinesis precedes the formation of the daughter stars and leads up to the formation of resting daughter nuclei, I have observed three times in the curettage from stomachs at a stage when there was no tumour palpable and in which the diagnosis was confirmed by operation, necropsy, or by the later development of a tumour. The presence of a large number of cells in the stomach after curetting with the stomach-tube, which cells show mitosis, and some of them pathological or asymmetrical mitosis, is very significant and should stimulate further and very careful examination. Sooner or later a fragment will be obtained which will give the typical structure of carcinoma. For this kind of curetting a soft stomach-tube suffices provided it has a lower and a lateral aperture the edges of which scrape away the tiny elevations of gastric mucosa when the tube is moved in and out of the mouth. The procedure should be carried out in the morning before breakfast when the stomach is empty. This method of obtaining specimens from the gastric mucosa during life is free from danger and not once in my experience has any pain, distress, or hæmorrhage been produced thereby. In many cases of chronic gastritis, achylia gastrica, and carcinoma tissue fragments are found in the lavage water without especially making an effort to loosen them, by moving the tube along the gastric walls. The forcible detachment of larger pieces of gastric mucosa is an accident occurring during lavage by suction or aspiration of the tube, particularly when the instrument is in inexperienced hands. It is followed by copious hæmorrhage, yet pain is rarely complained of. I reported a case of one of my students[11] who aspirated a piece of his own gastric mucosa 10 by four millimetres; it was followed by a profuse hæmorrhage but no other serious consequences, as uninterrupted recovery occurred under rest and liquid diet.

The Oppler-Boas bacilli are very long, rod-shaped organisms, non-motile, and usually thicker at one end than at the other, presenting the shape of a base-ball bat. Kauffmann and Schlesinger[12] have isolated these organisms and have asserted them to be of great significance in cancer of the stomach. Riegel[13] confirms the occurrence of these bacilli in enormous numbers in carcinoma and adds that although there are numerous fungi that have the property of forming lactic acid in stomach contents this cannot alter the significance of the Kaufmann and Schlesinger observation. He does not consider these organisms as pathognomonic of gastric cancer but as very important for the diagnosis. Dr. Harry Adler and myself have examined 56 cases for the Oppler-Boas bacilli and have failed to observe them in only three cases. The presence of this organism is therefore an important factor, aiding in the diagnosis; and whilst not pathognomonic they are of the same diagnostic value as the presence of lactic acid, and therefere do not constitute an early sign of cancer.

Microscopical evidences gained from the contents or the walls of the stomach.—In the preceding part of my address I have briefly outlined my opinion concerning the diagnostic value of subjective and objective signs and symptoms; of the various ways and degrees in which the three functions of the stomach, peristalsis, secretion, and absorption, can be altered; and of the value of the chemical and microscopical examinations of the urine, the blood, and the gastric contents. There is therefore not one clinical sign or symptom, chemical or microscopical evidence, which is characteristic or pathognomonic for the fully-developed gastric carcinoma, not to speak of the value of these conditions and symptoms for the early diagnosis. We are therefore compelled to seek further evidences from which we may hope to obtain information. One of the first and indispensable steps towards the attainment of new truth is to admit the helplessness of our present knowledge and the inadequacy of our present means of diagnosis. I have attempted to enlarge the diagnostic technique in this respect by efforts at obtaining histological fragments of gastric mucosa by curetting the walls of the stomach with a stomach-tube.[14] After this curetting the stomach is washed out with a measured quantity of water. If the particles detached from the gastric mucosa are not visible to the naked eye this lavage water is sedimented in the centrifuge and the sediment is examined microscopically. It is not sufficient to look simply for particles of the actual structure of the malignant tumour in the wash-water. One may occasionally have the good fortune to arrive at a positive diagnosis by finding actual structural fragments of an existing carcinoma, but in my experience such an occurrence always speaks for a neoplasm that has already progressed very far and which can be diagnosed by other methods without gastric curetting. Structural fragments are only detached from ulcerating tumour masses in the stomach, and in all the cases in which I succeeded in getting such fragments metastases had already formed and the diagnosis could not be called an early one. The finding of actual tumour masses, then, is comparatively rare, and while it firmly establishes the diagnosis of carcinoma of the stomach is of no value to the surgeon in his efforts to secure an early operation. In curetting a very large number of stomachs for the purpose of studying the histological condition of the mucous membrane I have been led to hope for some aid to an early diagnosis by a study of the pathological and atypical mitoses that occur in the gastric structure. The finding of pathological mitoses, and even of carcinomatous particles, is considered to be an accident by a number of competent observers, but it is probable that this occurrence is said to be so rare, not because these fragments do not occur in the vomit or wash-water, but because they are not methodically and systematically looked for, and especially because few directed efforts have been made by competent men to detach such fragments intentionally from the gastric mucosa. There is every reason why we should intentionally attempt to secure such particles from the stomach, just as they are secured by curetting the uterus. Hitherto in such examinations the histologist reserved his opinions, as a rule, until he found the typical structure of a carcinoma in the tissue fragments gained. But it is possible to go a step farther and to diagnose this disease from fragments showing the following conditions: (*a*) the ducts of the peptic glands are elongated and dilated, the cells frequently detached from the periphery of the gland and lying loose in the gland lumen and presenting numerous karyokinetic figures (Fig. 1); (*b*) when these nuclear figures, or miteses, present asymmetrical or hypochromatic and hyperchromatic forms they are especially suggestive of a malignant process. (Fig. 2 and Fig. 3.) These mitoses must be examined in tissue that is as fresh as can be obtained; where the least decomposition has taken place they are no longer demonstrable by tinctorial methods. For this purpose curettage of the stomach is indispensable, as the tissue fragments gained by other methods, vomiting or simple lavage, are, as a rule, in a state of necrobiosis. The result of the procedure of curettage is made more reliable if the patient is fed by the rectum for a time and all food is excluded from the stomach. Wherever possible the stomach should be thoroughly washed out for several days in succession in order to avoid confounding particles of meat, &c., retained in the ingesta with particles of neoplasm. The diagnosis of malignant disease of the peritoneum and pleura from numerous cells found in the aspirated exudate, which cells were in the state of indirect nuclear division, was probably first definitely made by Rieder.[15] The necropsy in

[10] Deutsches Archiv für Klinische Medicin, Band liv., Heft 6, p. 544.
[11] Hemmeter, op. cit., p. 146.
[12] Wiener Klinische Rundschau, 1895, No. 15.
[13] Erkrankungen des Magens.
[14] Histological Studies relating to the Early Diagnosis of Carcinoma of the Stomach, Philadelphia Medical Journal, Feb. 3rd, 1900, p. 229.
[15] Deutsches Archiv für Klinische Medicin, Band liv., S. 544.

Rieder's case proved the existence of a sarcoma of the peritoneum secondary to malignant disease of the ovaries. In the fluids obtained during life cells were found which were remarkable, in the first place, on account of the differences in size and shape of the individual cells. Often there were indentations and constrictions, sometimes buddings. In many cells there were one or many vacuoles, often so large that the nucleus was pushed to one side, and sometimes almost completely submerged beneath the enormous vacuole. Examination of the stained cells showed a large number of cells in a state of indirect division, and especially cells with atypical mitoses. George Dock [16] made similar studies and established the diagnosis of carcinoma of the pleura and peritoneum from analogous cellular forms found in the aspirated transudate. Asymmetrical mitosis is not easy to recognise in fragments gained from the gastric mucosa on account of the frequent imperfect preservation of the chromosomes in many cases. Many fragments are found which are useless for the purpose of studying pathological mitoses for this reason. The methods and technique are fully described in my text-book.[17]

In a number of German publications I have noticed the definition of *early* diagnosis, to the effect that the disease is recognised before a tumour can be felt. As fully two-fifths, according to some authors one-half, of the tumours of the stomach are not palpable it is evident that this is not a reliable sign to go by. Tumours may be very large and may be not at all palpable. The palpability of gastric tumours depends too much upon the situation of these neoplasms in the stomach, although 60·8 per cent. of the tumours observed at necropsies by William H. Welch [18] were situated in the pyloric region; all of these tumours were not palpable. It is only when the normal pylorus is displaced downward by the weight of the tumour that it becomes palpable. I have observed quite a number of tumours of the pylorus at necropsies which were by no means palpable during life owing to the fact that the tumour was adherent to the under-surface of the liver.

In an investigation on the pathological anatomy of the human stomach, with a special reference to the practical value of diagnosis by means of fragments of the mucous membrane, Leuk [19] holds that it is not possible to distinguish between carcinoma and atrophic gastritis by examining such fragments unless portions of actual carcinomatous growth are found. He does not go into the consideration of the relative frequency of the findings of cells showing atypical and asymmetrical mitoses in the contents of the stomach or gained after gastric curettage. But few investigators have as yet worked over this subject, as may be seen from the literature in my articles [20] and in the second edition of my text-book on "Diseases of the Stomach." The whole subject is not sufficiently mature to permit of the annunciation of dogmatic conclusion either way. I wish simply to emphasise that the diagnosis of carcinoma of the stomach *has* been made in this way, at a time when we had every good reason to believe that it was an early diagnosis, and that this opinion was confirmed either at operation or at the eventual necropsy. Leuk's work, in my opinion, is not based upon a sufficiently large number of clinical observations as might be desirable for the importance of this question. It is confessedly a rare thing that the diagnosis of carcinoma of the stomach at an early stage can be made in this manner, but this I explain on two grounds: (1) it is rare that patients present themselves at an early stage for examination; and (2) the method of gastric curettage is rarely practised. I am of the opinion that as the method comes more and more into use we may hear of a larger number of early diagnoses of this disease being made.

Wherever appreciable quantities of lactic acid are regularly found in the stomach, together with the signs stated in the preceding, the matter of an *early* diagnosis is out of the question. The presence of tumour or metastases, the presence of considerable quantities of lactic acid and Oppler-Boas bacilli, the reduction of the proteid digestion under 30 per cent., with absence of free hydrochloric acid, mean a late diagnosis from the surgical standpoint.

The test of the peristalsis or motility of the stomach should never be omitted from the diagnostic methods. In the majority of cases the peristalsis suffers greatly, but in cancers located at the fundus and at the curvatures the

FIG. 2.

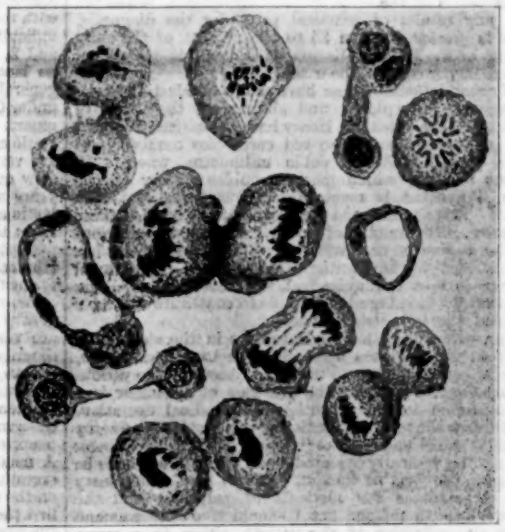


FIG. 3.

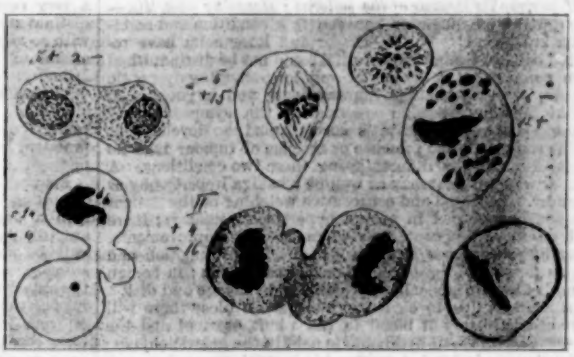


Fig. 2 gives a number of cells in the state of atypical mitoses, taken from parts of the specimen illustrated in a lower power on Fig. 1. To the left side, below the centre, is a mitotic form showing a cell with a huge vacuole and three nuclei; directly opposite on the right side of the illustration is a similar smaller cell in which the protoplasm has surrounded a vacuole like a narrow ring. The lowest cell in the figure is an asymmetric mitosis, showing an uneven number of chromosomes and disrupted chromosomes. This is also shown in other cells of Fig. 3, particularly in the cells showing a crippled pithode stage. The cells thus pictured were discovered lying detached in the lumen of the gland-ducts as shown in Fig. 1.

[16] Cancer of the Stomach in Early Life, American Journal of the Medical Sciences, 1897, p. 65.
[17] Hemmeter, op. cit., pp. 561-564, second edition.
[18] Pepper's System of Medicine, vol. ii.
[19] Zeitschrift fur Klinische Medicin, Band xxxvii., Heft 4.
[20] Philadelphia Medical Journal, Feb. 3rd, 1900, and New York Medical Record, Oct. 21st, 1899.

motor power of the stomach may remain normal throughout the course of the disease. There are even rare cases of pyloric cancers in which motor power may remain intact for a long time.

Absorption.—The tests for the absorptive power of the stomach usually give evidence of great reduction in this function. There are, however, many exceptions to this rule, no doubt due to the fact that the gastric mucosa is in a fairly normal condition, notwithstanding the presence of a very circumscribed carcinoma.

Urine.—Investigation made hitherto on metabolism and the constituents of the urine have, in my opinion, not as yet yielded any results of practical value for the diagnosis. Albumin is present in from 35 to 50 per cent. of the cases according to F. Müller. Excess of indican is present in from 85 to 90 per cent. of the cases.

Blood examinations.—These have shown a reduction in the percentage of hæmoglobin and absence of the digestive leucocytosis. Frederick P. Henry has emphasised the fact that in gastric carcinoma the red corpuscles number from 2,000,000 to 3,000,000 per cubic millimetre, whereas in pernicious anæmia, which most resembles cancer of the stomach, the count is much lower, sometimes less than 500,000.[21] This phenomenon will serve to distinguish these two diseases. The number of erythrocytes is not proportionate to the degree of cachexia. In this opinion Henry has been confirmed by Dr. Anton Krokiewicz.[22] My personal experience is that the numerical relations of the cellular elements of the blood are too variable to constitute a reliable diagnostic factor in gastric carcinoma.

Tumour.—Demonstration of a tumour in the stomach is the most reliable evidence upon which to base a diagnosis, but it is not an early diagnostic sign. According to various prominent German surgeons the presence of a tumour is a contra-indication to the execution of a radical operation, having in view the total extirpation of the neoplasm. Czerny and Rindfleisch[23] and Kraske[24] argue that gastric cancer should not be radically operated upon after it can once be diagnosed in the form of tumour. It will not be necessary for me to consider the methods of palpation and the mobility of gastric tumour, but I should like to recommend urgently the palpation of the patient, either in a warm bath or under anæsthesia, when a tumour cannot be made out by palpation under ordinary conditions.

Hypertrophic stenosis of the pylorus; stenosing gastritis.—The differentiaI diagnosis between this condition and carcinoma is difficult. W. S. Thayer and Rosenheim have reported cases of benign stenosis that could not be distinguished from carcinoma. A history of very long-standing dyspeptic disease, with alternating improvements and aggravations, speaks for hypertrophic stenosis if the symptoms and anamnesis of chronic gastritis accompanied the development of the stenosis. The presence or absence of tumour is of no diagnostic value in differentiating these two conditions. A tumour when present may as well be a benign hypertrophy as a cancer. Repeated and consecutive weighing of the patient is urgently indicated in benign hypertrophic stenosis; there will be more frequent and more lasting improvements, extending sometimes through years. Motor function and stagnation grow progressively worse in carcinoma; in benign stenosis they are amenable to treatment by lavage and diet.

In stenosis due to cicatrix from gastric ulcer there will have been a history of blood in the vomit or stool and the presence of excess of hydrochloric acid in the gastric chyme; if the stenosis is due to hypertrophic gastritis these signs will not be observed, though a normal amount of hydrochloric acid may exceptionally be met with in the early stages of the latter.

Among all the early signs and symptoms of gastric carcinoma, the dyspeptic symptoms and the evidences of disturbed functions, and the general condition, there is not one fact that is pathognostic for an early diagnosis. I do not assert, however, like Haberkant, Lindner, and Kuttner, that in the present state of our knowledge the early diagnosis of gastric carcinoma is entirely impossible.

Diseases of the stomach associated with the absence of hydrochloric acid.—A brief consideration of these will be indispensable in our efforts to reduce the possible sources of error in making a diagnosis. The atrophies that may be associated with the absence of hydrochloric acid are the following: (1) apparently idiopathic (Nothnagel and Fenwick); (2) end stages of long-standing chronic gastritis; (3) gastric atrophies occurring with mammary, uterine, and intestinal carcinoma; (4) with benign pyloric stenosis: and (5) with gastric cancer.

Achylia gastrica, which has been first described by Einhorn in 1888, means the complete absence of the secretion of gastric juice, not simply hydrochloric acid only, but also of the ferments. So-called anacidity, or achlorhydria, means the absence or loss of hydrochloric acid, but pepsinogen and rennin zymogen are still secreted. Achylia gastrica may be congenital. The existence of so many conditions connected with the absence of hydrochloric acid is an evidence of the difficulty of utilising this sign for diagnosis. In Groups 1 and 2, however, the motility is normal; there is, as a rule, no lactic acid formation, and the course of the disease is generally a long one. The atrophies described by Fenwick under Group 3 have not been as yet carefully studied with regard to their motility and the presence or absence of lactic acid. Group 4, the benign forms of pyloric stenosis, are very rare, but they can be distinguished by their long, slow course. If, therefore, the history extends over several years no importance can be attached to the presence of lactic acid. Achylia gastrica is also a disease of long duration; the motility is always excellent, the appearance of the patient is good, and the condition of the chemistry of the stomach is always the same, showing no lactic acid, no ferments, and no hydrochloric acid.

Neuroses of the stomach associated with permanent or temporary loss of hydrochloric acid secretions.—These conditions are very often perplexing and might be confused with the diagnosis of cancer, but the presence of hysteria or neurasthenia and the long duration of the disease, together with the result of curetting of the stomach for fragments of mucosa, should make the differentiation possible. Patient observation will eventually detect a period in the course of neuroses when hydrochloric acid is again secreted normally. A neurosis during the course of which a perfectly normal secretion may alternate with anacidity (even achylia), and, on the other hand, with hyper-acidity or super-secretion, was first thoroughly investigated at my clinic. I have proposed the name "heterochylia" for this condition.

Gastroscopic examination.—Whether the gastroscope will enable us to make an early diagnosis of gastric carcinoma is a very remote problem. Gastroscopy has no doubt made distinct advances during the last 10 years, but it is connected with so many difficulties and dangers that the general application of this method cannot be hoped for at present. Mikulicz, Kelling, Rosenheim, Revidzoff, and Kuttner have published their studies on gastroscopic examination of the stomach. After a critical study of their reports one cannot fail to be conscious of discouragement at the absence of practical results. There is still very little promise in this method.

Electrodiaphany or transillumination of the stomach, according to the method first suggested by Einhorn, may give a suggestion of the existence of a tumour of the anterior gastric wall, but a chance of such a demonstration will be very small. Out of 1300 cases of cancer of the stomach collected by W. H. Welch[25] only 30 occurred on the anterior wall—i.e., 2·3 per cent. In order to cut off the rays of the intragastric lamp a tumour must have a thickness of from 1·5 to two centimetres.[26] These observations have been confirmed by me. With a tumour of such dimensions as a requisite and the extreme rarity of the location of tumours on the anterior gastric wall I am disposed to consider this method unavailable for the early diagnosis.

The use of the x rays for diagnosis.—I was among the first to publish studies of the position and size of the stomach for diagnostic purposes.[27] Boas and Levy-Dorn[28] have proposed a method of recognising strictures of the gastro-intestinal canal by skiagraphy. Capsules coated with an insoluble material and filled with bismuth subnitrate cut off the x rays and their position can be recognised in the intestines, but I doubt very much whether this method will exactly locate a carcinomatous constriction because the intestine is not a simple tube but a labyrinth of convolutions superimposed upon each other, so that even if the bismuth capsule could be recognised it is absolutely impossible to state

[21] Archiv für Verdauungskrankheiten, Band iv., S. 1.
[22] Ibid., Band vi., p. 25.
[23] Festschrift gewidmet Theod. Billroth, 1892.
[24] Berliner Klinische Wochenschrift, 1894, Nos. 20 and 21.
[25] Pepper's System of Medicine, vol. ii., p. 561.
[26] Kuttner and Jacobson: Experiments on Cadavers, Berliner Klinische Wochenschrift, 1893, No. 29.
[27] Boston Medical and Surgical Journal, April, 1896.
[28] Deutsche Medicinische Wochenschrift, 1896, No. 2.

whether it is in the stomach or in the intestine or in what convolution of the intestine it is located.

Exploratory laparotomy.—This diagnostic incision I would warmly recommend in all cases of gastric disease associated with (1) rapid emaciation; (2) absence of hydrochloric acid; (3) reduction of proteid digestion under 30 per cent.; and (4) the presence of lactic acid by Uffelman's test; or (5) of numerous long baseball-bat shaped Oppler-Boas bacilli. If all of the above signs and symptoms were present in any case, even of short standing and recent beginning of the disease, and no improvement followed three weeks of appropriate treatment, I should feel justified in making the diagnosis of carcinoma of the stomach even in the absence of tumour and should urge an exploratory laparotomy.

Albert Albu[39] reports a very interesting case in which the exploratory laparotomy revealed an infiltration of the pylorus which, in his own words, was no thicker than a small chestnut and proved, after a resection of the pylorus, to be scirrhus. This patient had an acute attack of tetany. Recovery after pylorectomy was satisfactory and the motor function of the stomach was restored. In this case the diagnosis was not certain before exploratory laparotomy had been undertaken. The early diagnoses and early operations are extremely rare in the literature of the subject, due to the reasons which I have already stated—viz., that the patients do not present themselves in time and that the methods which are most promising for an early diagnosis are either neglected or permission for their execution is refused by the patient. The most important information from all the physical signs and symptoms and from the chemical and microscopical investigations may be arranged in order of their diagnostic value as follows, but I do not desire to be dogmatic in this statement. 1. Chronic gastritis or nervous dyspepsia with progressive aggravation in spite of four weeks' proper treatment. 2. Progressive weakening of the peristaltic power. This can only be confused with the benign stenosis of the pylorus, but in the latter case (the benign stenosis) there is, as a rule, a normal or an excessive amount of hydrochloric acid. In malignant stenosis there is absence of hydrochloric acid and formation of lactic acid. The diagnosis between benign and malignant stenosis may be difficult at the beginning of the clinical observation of any case, but after from two to four weeks of observation it should present no difficulties. 3. Progressive diminution in the amount of free hydrochloric acid with steady loss of peristaltic power. 4. The presence of large numbers of atypical and asymmetrical mitoses after gastric curettage, together with characteristic histological changes in the glands previously described (especially in cases of motor insufficiency). With such clinical indications exploratory laparotomy should be undertaken, and where this step proved the diagnosis to be wrong, in my experience, it was discovered that conditions were present which necessitated operative interference anyway, such as, for instance, motor insufficiency from cicatrices, indurated ulcers, or adhesions.

In this schema the diagnostic value of the Oppler-Boas bacilli, tumour, and lactic acid are not referred to because they are late signs. I do not wish to be understood to say, however, that a surgical operation should not be undertaken when these late signs are present. Many times even the presence of a tumour is not a contra-indication to an operation, because a malignant tumour in the stomach may be present, as I have noted on three occasions, and no signs of metastases of infection of the lymph glands be discoverable by a careful search at the necropsy.

The diagnosis of carcinoma of the stomach is still in its elementary rudiments. We do not know what the causes and nature of malignant neoplasms are. The diagnosis of any disease under such conditions must be difficult. We must bear in mind that the diagnosis on neoplasms on the surface of the body in their early stages presents considerable difficulty, and in the case of the stomach we are required to diagnose these new growths in an organ entirely hidden from view and almost entirely from touch. With a knowledge of the nature and cause of the disease will come a knowledge of its early recognition and its successful treatment. Think of the condition of the diagnosis of diphtheria and tuberculosis before the cause of these diseases was understood. But from many sides and in many countries dutiful labourers are working towards the common goal of the cause of this human scourge. Then will come the time when the malignant neoplasm will melt away under the influence of a new treatment, similarly as the pseudo-membrane disappears in diphtheria after the injection of antitoxin. There is some reason to believe that not all malignant neoplasms have the same etiology and therefore will probably not have the same treatment. Recent personal studies have led me to incline to the view that in some carcinomas, at least, we are dealing with a deep-seated disturbance of the innermost metabolism of the individual cells, and that whatever bacteriological findings can be made in such growths are of secondary importance or accidental accompaniments. The further development of the subject depends, in my opinion, not so much on bacteriological investigation as upon the pathological and physiological chemistry of the cell; though the problem as yet presents great difficulties, still, they do not seem insurmountable, even with the means at present at the disposal of the physiological chemist.

The inevitable recurrence of carcinoma after operation of gastric malignant neoplasm should impress us with the fact that surgical operation cannot be the treatment of the future for such diseases. The impression is spreading that gastric surgery can, after all, only bring symptomatic relief, and according to the classical testimony of Mikulicz[40] gastric surgery, after a career boldly and brilliantly begun, has arrived at the height of its capability for technical development after 20 years and now stands arrested before the natural boundaries of internal medicine, the fundamental pillars of pathology. It does not appeal to reason to assume that this form of treatment, by operation merely, although it is at present the most satisfactory and promising that we possess, represents the limit of human knowledge and ingenuity. The Löffler, Behring, Pasteur, Koch, and Virchow of the future will solve this riddle for us and the obscurity about malignant neoplasms must vanish before human intellect, and then will come an effective treatment based upon the etiology of the disease. "Life is short, but Art is long." Hippocrates: *Ὁ μὲν βίος βραχὺς ἡ δὲ τέχνη μακρή.*

[39] Archiv für Verlauungskrankheiten, Band iv., p. 466.

[40] Chirurgischer Congress, 1896.

A Clinical Lecture

ON

SYPHILITIC AFFECTIONS OF THE STOMACH.

Delivered at the London Temperance Hospital

BY W. SOLTAU FENWICK, M.D., M.R.C.P. LOND.,

SENIOR PHYSICIAN TO THE HOSPITAL; PHYSICIAN TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

GENTLEMEN,—During the last few months you have had the opportunity of observing several cases in which, instead of adopting the orthodox methods of treatment for ulcer of the stomach or gastritis, we employed large doses of iodide of potassium and other anti-syphilitic remedies with immediate and complete success. The curious toleration displayed by these patients to drugs which under ordinary circumstances aggravate rather than relieve the symptoms of gastric irritability helped at the time to confirm our suspicions concerning the specific origin of the diseases in question, and will now serve me as an excuse to draw your attention to a subject of great practical importance, but one which is hardly mentioned even in the most recent English text-books.

It is commonly taught that while both the mouth and the rectum frequently suffer from tertiary manifestations of syphilis, the intermediate portions of the alimentary canal habitually escape, and even the cases of gummatous lesions of the stomach described many years ago by Cornil, Klebs, and Birch-Hirschfeld have apparently failed to shake this belief. The conservatism thus displayed is not due entirely to that strange pertinacity which causes each successive author to reproduce the time-worn arguments and statistics of his predecessors, but also in great measure to the injudicious zeal of certain writers who, having been imbued with

the notion that in a syphilitic subject all diseases are syphilitic, too often neglect demonstrable facts in favour of unwarrantable assumptions. I therefore propose to confine my observations to such morbid conditions of the stomach as have been proved to result from syphilis, and only to draw such conclusions from them as clinical observation can substantiate.

Syphilis may affect the stomach in three ways: (1) by the formation of gummata; (2) by the production of endarteritis; and (3) by exciting chronic inflammation of its mucous membrane.

1. *Gummata.*—A gumma of sufficient size to attract attention is rarely encountered. Chiari only observed three instances in 243 necropsies upon persons suffering from syphilis and in all about 16 genuine examples are recorded in the literature of the subject. The tumour, which is often multiple, is usually situated in the submucous tissue of the pyloric region near the lesser curvature. It is round or somewhat flat, yellowish in colour, firm on section, and varies from 10 to seven centimetres or more in diameter. At first the mucous membrane which covers it is stretched and thinned out from pressure, but as the nodule increases in size and its substance undergoes softening it usually becomes destroyed and an ulcer is produced. A gummatous ulcer consequently presents certain features which serve to distinguish it from the simple variety. In shape it is often irregular, scalloped, or even triangular, its edges are thickened and undermined, while its walls and base are shaggy, cheesy, hæmorrhagic, or covered with a firmly-adherent yellow slough. The mucous membrane in the vicinity of the neoplasm or its resultant ulcer exhibits signs of chronic inflammation and is not infrequently studded with minute gummata. Perforation of the stomach has not been observed, although in a case recorded by Lancereaux this accident was only prevented by the presence of a cheesy nodule. It is important to observe that in all these cases manifestations of syphilis were present in the other abdominal viscera, the liver, pancreas, spleen, or lymphatic glands presenting gummata or cicatrices. In cases of congenital syphilis in newly-born infants the small intestine is particularly apt to suffer and small gummata may often be found scattered throughout its length or congregated about the ileo-cæcal valve. Similar conditions have also been described in the fœtus (Bittner).

2. *Endarteritis.*—Obliterative endarteritis affecting the gastric vessels must not be regarded as necessarily an indication of syphilis. It may be observed in the fibrous base of nearly every chronic simple ulcer and in not a few cases of long-standing perigastris due to disease of some neighbouring organ. Its pathology is similar to that form of the endarteritis which commonly accompanies cirrhosis of the lung and kidney, and in the case of a gastric ulcer its existence is of some value to the organism since the gradual occlusion of the arteries which lie in the track of the advancing disease tends to prevent hæmorrhage. The syphilitic variety, on the other hand, is comparatively rare as a primary complaint, and as far as my own experience goes is always associated with gummata in the liver, spleen, pancreas, or retro-peritoneal glands. It chiefly affects the smaller branches of the pyloric vessels which ramify in the subserous and submucous connective tissue, and by thus diminishing the blood-supply to the part tends to induce inflammatory thickening of the mucous membrane and to give rise to interstitial hæmorrhages and superficial ulcerations. When the process is especially severe or widely diffused the nutrition of the gastric wall is so much reduced that the tissues are no longer capable of withstanding the solvent action of the gastric secretion, which consequently erodes the surface and gradually produces an indolent form of ulceration. In other cases the partially obstructed vessel becomes the seat of thrombosis and the mucous membrane which it supplies, being suddenly deprived of blood, is rapidly digested. In the former case the patient suffers from the symptoms of chronic ulcer of the stomach; in the latter from attacks of acute dyspepsia which are not infrequently followed by hæmatemesis.

3. *Chronic gastritis.*—This may ensue either as a direct or as an indirect result of syphilis. The latter variety is by far the most common and is due either to embarrassment of the gastric circulation from disease of the liver or spleen, to lardaceous degeneration of the vessels of the stomach, to secondary disease of the kidneys, or to the specific cachexia. This gastritis does not differ histologically from the usual forms and like them usually subsides when its exciting cause has been removed. Chronic inflammation of the stomach *directly* dependent upon the systemic infection occasionally results from repeated acute attacks during the early phases of the complaint, such as have been described by Jullien and Fournier, but as a rule it only appears at an advanced stage of the disease and is often associated with gummatous lesions of the bones, liver, or testes. To the naked eye the mucous membrane is either dull white and peculiarly opaque, or appears to be thickened and irregularly congested, with a surface like velvet pile. On microscopical examination the superficial roughness of the tissue is found to be due to an absence of the normal columnar epithelium and to a hyperplasia of the connective tissue between the mouths of the glands which give the section the appearance of being connected with fine papillæ. The capillary vessels which ramify between the glands are dilated and filled with blood corpuscles, but here and there their outlines are obscured by an accumulation of small round cells which pervade the whole of the connective tissue and form thick layers around the mouths and fundi of the glands. The lymphoid follicles are enormously enlarged and their cellular elements frequently penetrate the muscularis-mucosæ and invade the submucosa. The gastric glands vary in appearance at different parts of the section, at one spot being comparatively healthy, while at another they are twisted, distorted, or disorganised by the round-cell infiltration. These general features are common to all forms of interstitial gastritis, from whatever cause they arise, but in the present case two special phenomena exist which indicate the syphilitic origin of the disease. The first of these takes the form of miliary granulations which occupy the whole thickness of the mucosa and may even invade the submucous tissue or project slightly above the free surface. These nodules, which are really minute gummata, consist for the most part of a homogeneous, granular, non-staining material, and where several have coalesced a large portion of the section appears to consist entirely of this cheesy material. The other characteristic feature of a syphilitic gastritis is a hyperplasia of the inner coats of the small arterioles situated in the submucosa which produces considerable narrowing of their lumina and not infrequently leads to thrombosis. These arterial changes may be observed in any part of the section but are always most noticeable in the vicinity of the miliary gummata.

Before proceeding to describe the clinical aspect of these diseases there are two errors against which I must caution you. In the first place, do not run away with the idea that every gastric ulcer is due to syphilis simply because the patient happens to have suffered at some time or other from that complaint. It should always be borne in mind that probably about 5 per cent. of the population suffer from ulcer at some period of their existence, and since syphilis is also by no means uncommon it must necessarily happen that the two diseases will frequently be associated in the same individual independently of any causal relationship between them. In 308 cases of chronic gastric ulcer of which I possess clinical notes a history of former syphilis existed in 10 per cent., but in the 132 fatal cases of the disease gummata or other evidences of syphilis were observed after death only in eight, or about 6 per cent. I am therefore of opinion that only about 5 per cent. of all chronic ulcers of the stomach have any direct connexion with syphilis, and that in the majority of these the connecting-link is to be found in arterial degeneration rather than in the formation of gummata.

My second warning is this: before you conclude that the symptoms of gastric irritation in a syphilitic subject are due to the specific malady make quite sure that they do not arise from injudicious medication. You are aware that many persons are very intolerant both of mercury and potassium iodide, and that the prolonged administration of these drugs frequently gives rise to troublesome gastritis, accompanied by anæmia, loss of appetite, emaciation, and great debility. When these symptoms develop in a patient who has been under our care from the first there is, of course, no difficulty in assigning the gastric disorder to its proper cause and, by discontinuing the line of treatment, in curing it. When, however, a patient of whom we know nothing except that he has had syphilis consults us for chronic gastritis there is always a great temptation to overlook the possibility of toxic influences and to prescribe the same drugs which were originally responsible for the disease. Some of you may recollect a good instance of this in the case of a woman who

was sent to us with a diagnosis of cancer of the stomach on account of the pain after food, vomiting, and loss of flesh from which she had suffered for several months. You will remember we found upon inquiry that she had been under medical treatment for some time for an ulcer of the leg and was inclined to attribute her indigestion to the pain and worry attendant upon that disease. As, however, she was obviously suffering from a gastritis of toxic origin we preferred to take the view that the medicine and not the sore on the leg was the cause of the trouble, the assumption being that the former treatment had been directed against possible syphilis. Careful regulation of diet combined with a rhubarb and bismuth mixture afforded immediate relief and within a month the patient reported herself as feeling perfectly well. It therefore behoves us to remember that gastritis occurring during the course of syphilis may result from injudicious treatment as well as from the disease itself.

Chronic ulceration of the stomach due to syphilis is most common in men between 25 and 40 years of age, in many of whom secondary symptoms of the infective disorder have either been very slight or were rapidly removed by treatment. The gastric complaint usually develops slowly, and for several months may be mistaken for some form of simple or inflammatory dyspepsia, but sooner or later the characteristic symptoms of ulcer show themselves and soon become severe. So far as my own experience goes—and I am unfortunately obliged to quote it owing to the absence of clinical literature—these cases chiefly differ from the simple variety of the disease in three particulars, the first of which is the extreme severity of the pain and vomiting, the second the infrequency of hæmorrhage, and the third their obstinacy to ordinary treatment and tendency to relapse.

Pain is invariably present, and, as is usual in gastric ulcer, is principally experienced in the epigastrium within half an hour after a meal containing solid food. In many instances, however, the suffering is almost constant, and even a diet of milk gives rise to oppression at the chest with distension and troublesome flatulence. When the disease has existed for some months the pain is often most intense during the night when the stomach is devoid of food, and it may then extend all over the abdomen and chest and radiate down the extremities or up the neck. Under these conditions the epigastrium is usually very tender, and the cranium, the tibiæ, and the heels may also be unduly sensitive to pressure. The attacks last for several hours and are frequently accompanied by flatulent and acid eructations, burning in the throat, intense thirst, and vomiting. They are temporarily relieved by a draught of milk or a dose of bicarbonate of sodium, and more effectually by vomiting. Rosanow diagnosed a syphilitic ulcer in a patient on account of the nocturnal pain and successfully treated it, while Bartumeus appears to lay stress upon attacks of emesis during the night, but since both these phenomena are met with in simple ulcer when complicated with hyper-secretion they cannot be regarded as pathognomonic of the specific form of the complaint. Vomiting is another conspicuous feature of the disease. At first the patient may only be sick during the painful crisis which the act of emesis tends to curtail, but as soon as secondary gastritis develops vomiting may occur after every meal, while from time to time attacks come on which last for many days and prevent the administration of nourishment by the mouth. The constant pain and vomiting soon induce a serious deterioration of the general health. The patient becomes very thin and feeble and presents the pinched and careworn look of one who is always suffering. The appetite may remain good or even be excessive, but he is afraid to gratify the desire for food on account of the punishment which is sure to follow, while at intervals he is tormented by a thirst which no amount of water will subdue. The bowels are confined and the tongue is often covered with a white fur. The urine is diminished in amount and its reaction is often neutral or slightly alkaline, while in many cases it contains an excess of phosphates but is deficient in chlorides. Anæmia is invariably present and the peculiar sallow complexion of many of the patients is very suggestive of specific cachexia. Although nearly 70 per cent. of the cases of simple ulcer suffer from hæmatesis this symptom appears to be comparatively rare in the syphilitic disease, possibly on account of the gradual obliteration of the gastric vessels which, as I have already pointed out, occurs in the vicinity of the sore. When, however, the portal circulation is embarrassed by co-existing disease of the liver or spleen vomiting of blood may be an early and recurrent symptom.

As a rule, the complaint fails to respond to the ordinary methods of treatment, and even when anti-syphilitic remedies are employed it may exhibit a great tendency to relapse. This latter peculiarity was very marked in the case of a woman who came under my care four or five times within two years for severe pain and vomiting after meals, accompanied by rapid emaciation. On each occasion the administration of mercury and iodides afforded almost immediate relief, and the disease appeared to be cured at the end of two months; but as soon as she discontinued the medicine, though persevering with a liquid diet, the pain recurred and she again lost flesh and vomited her food.

With regard to the chemistry of digestion I have very little evidence to offer. In the early stages of the complaint free hydrochloric acid may usually be detected after a test meal, and in those cases where nocturnal attacks of pain are present the vomit usually contains an excess of the mineral acid. But when the disease has given rise to great loss of flesh and to debility I have never observed hyper-chloracidity, but, on the contrary, have usually found evidence of lactic acid fermentation. When vomiting is excessive the ejecta consist almost entirely of alkaline and bile-stained mucus. The usual cause of death is exhaustion from inanition, but an intercurrent affection like tuberculosis or some syphilitic complication often hastens the fatal termination. Hæmatemesis and perforation appear to be rare. Among the sequelæ of the disease pyloric stenosis is the most important, as has been recorded by Cornil, Wagner, and Klebs.

Gastritis occurs both in hereditary and acquired syphilis and is chiefly characterised by its chronicity and intractability to ordinary treatment. In infancy and early childhood the intestine usually suffers along with the stomach, so that in addition to the vomiting there is either diarrhœa or obstinate constipation. In all cases the loss of flesh, anæmia, and debility are out of all proportion to the severity of the local symptoms owing to the consecutive atrophy of the gastric and intestinal glands which can be demonstrated in almost every case of so-called "syphilitic marasmus." During the period of childhood intercurrent attacks of acute gastritis, characterised by incessant nausea and vomiting and occasionally by severe gastralgia, are apt to occur from time to time. The bowels are confined, the tongue is thickly coated, and slight delirium may appear at night. If no food can be retained in the stomach the disease may prove fatal, but as a rule the acute disease passes off in a few days and is again replaced by the chronic form. In almost every instance the child presents evidences of syphilis in the face, teeth, and eyes, while not infrequently the development of a gumma heralds the onset of an acute attack. In a case which I have often shown in this hospital a large mass could be felt for several months in the liver, and subsequently a gummatous swelling appeared upon the forehead, while in the one reported by Hemmeter the child presented an enormous gumma of the lower jaw.

Mild forms of gastritis occurring in adult life are practically indistinguishable from the alcoholic variety, but in the more severe cases the progressive loss of flesh, excessive debility, anorexia, and profound anæmia, coupled with the absence of free hydrochloric acid from the gastric contents, are highly suggestive of a malignant growth. More than one case of this description has come under my care in which if it had not been for a routine trial of iodide of potassium I should have diagnosed cancer of the stomach; and I have known several patients who were condemned to carcinoma of the stomach or pancreas after an exploratory incision who made a perfect recovery under anti-syphilitic treatment. Although traces of altered blood may appear in the vomit severe hæmatemesis is rarely observed, unless the liver or spleen is also diseased.

DIAGNOSIS.

Specific ulceration of the stomach has to be distinguished clinically from the simple variety, from carcinoma, and from the gastric crises of locomotor ataxia. In every case of gastric ulcer the possibility of former syphilis should be borne in mind and a search should be made for scars and other evidences of the disease. Excessive pain and vomiting, with great emaciation or profound anæmia, are always suspicious symptoms, while nocturnal attacks in which pain is felt in the long bones as well as in the abdomen are also suggestive of syphilis. The great chief point of distinction, however, is the intractability of the disease to ordinary methods of treatment, while its symptoms rapidly subside on the administration of anti-syphilitic remedies. More than 60

years ago Andral diagnosed a syphilitic ulcer of the stomach from the fact that it was cured by mercury, and Galliard, Lancereaux, Wagner, Hayem, Rosanow, and Marc have all recorded instances in which the nature of the complaint was manifested in a similar manner.

The differential diagnosis of specific ulcer and cancer is often very difficult, especially when the former is accompanied by severe gastritis. In malignant disease, however, a tumour can usually be detected in connexion with the stomach: the loss of flesh and strength are more rapid, nocturnal attacks of pain are infrequent, and the vomit often contains altered blood. The subjects of gastric cancer are also very intolerant of mercury and iodides and after a few days' treatment will usually volunteer the statement that the medicine is making them much worse. In the syphilitic affection, on the other hand, these remedies are the only ones which are found to afford relief. The gastric crises of locomotor ataxia occur at irregular intervals and are seldom excited by the ingestion of food. There is little or no localised tenderness of the epigastrium and the patient presents the usual signs of early tabes. It is important to remember that the gastric disease and the specific lesion of the central nervous system seldom, if ever, coexist.

The diagnosis of syphilitic gastritis is made by the absence of the usual conditions which excite inflammation of the stomach and by the discovery of a strong history or of objective evidences of syphilis. A few days' trial of iodide of potassium will usually clear up any doubt, since in ordinary cases of gastritis this drug greatly increases the dyspeptic symptoms, while the contrary result is observed in the specific disorder.

TREATMENT.

Absolute rest is essential, and much time will be saved if the patient is confined to bed for the first fortnight. Milk should form the staple diet for the first three or four weeks, but as it does not always agree so well as in simple ulcer it may be necessary to administer it diluted with soda water or Vichy water. When vomiting is a troublesome symptom the milk should be peptonised. Clear soups and broths and jellies and junket may also be allowed if they can be taken without discomfort. After the first month, should the case be progressing favourably, milk puddings, soft bread-and-butter, eggs, tripe, and oysters may be allowed, and the diet may subsequently be increased by the addition of pounded fish, finely-minced sweetbreads, and chicken cream. Meat and green vegetables should not be allowed for at least six months. If vomiting is urgent it may be necessary to feed the patient by the rectum. When abdominal pain is severe the epigastrium may be constantly covered with a large linseed poultice, but as a rule the repeated application of small blisters is of greatest value. With regard to medicinal treatment it may be stated at once that mercury should always be combined with the iodides, since the latter are much less efficacious when given alone. In most instances it is sufficient to prescribe a mercurial pill of two grains with an equal quantity of extract of hyoscyamus night and morning, but occasionally drachm doses of the solution of perchloride of mercury are to be preferred. In young children inunctions of mercurial ointment or full doses of mercury and chalk are the most convenient method of administering the drug. If there is any tendency to diarrhœa a small quantity of opium may be included in the prescription. The iodide of potassium must be given in doses of from five to 15 grains, and is conveniently combined with carbonate of bismuth and liquid extract of sarsaparilla, while the addition of 10 minims of glycerine of carbolic acid often helps to prevent the oppression and flatulence experienced after food. Should the bowels remain constipated in spite of the mercury a teaspoonful or more of Carlsbad salts may be given each morning before breakfast. Lavage is chiefly indicated in chronic gastritis accompanied by troublesome vomiting and in cases of partial obstruction of the pylorus; but it must be avoided when the symptoms of ulceration are present. In every instance the patient should be warned of the possibility of a relapse lest he be tempted to discontinue the treatment as soon as the urgent symptoms have subsided.

VACCINATION STATISTICS.—At a meeting of the Bath Board of Guardians held on Sept. 18th it was reported that during 1900 there were 1668 births registered and that of these children 1071 were successfully vaccinated. 40 summonses for non-vaccination were obtained, of which 18 resulted in the defendants being fined, the remaining 22 being eventually vaccinated.

THE INFECTIOUSNESS OF THE MILK OF TUBERCULOUS COWS; THE BACTERIOLOGICAL DIAGNOSIS, AND THE PRACTICAL VALUE OF TUBERCULIN FOR THE EXTERMINATION OF TUBERCULOSIS AMONG CATTLE.[1]

BY DR. LYDIA RABINOWITSCH,
OF THE INSTITUT FÜR INFEKTIONSKRANKHEITEN, BERLIN.

THE frequency and constant increase of tuberculous disease among cattle long ago drew serious attention to the question whether the milk of tuberculous cows is capable of carrying infection to other animals. By means of minute and varied experiments it has been established beyond doubt that such is indeed the case—that tuberculosis can certainly be produced in calves and swine through feeding them with infected milk. Nevertheless, it still remained to be shown how very common this mode of infection is under natural conditions. The magnitude of this danger of the spreading of tuberculosis among animals due to the consumption of milk is best illustrated by the frequent occurrence of tuberculosis among calves and by the alarming increase of the same disease among swine which has been observed within the last few years. About 90 per cent. of the latter cases have been proved to originate in feeding with infected milk. The frequent occurrence of intestinal infection need not be wondered at when we consider the extent of tuberculous disease among milch cows as well as the fact that for a considerable length of time after birth the young calves are almost exclusively fed with their mothers' milk. The increase of tuberculosis among swine is further explained by the fact that the farrows are likewise raised on cows' milk, the principal fodder of pigs in these days of large dairies consisting in the raw dairy residues made up of the deposits and the skim milk left over from the centrifuging process. The transmission of tuberculosis among cattle and pigs by means of milk being established, it now remains to be seen whether the milk of all tuberculous cows contains tubercle bacilli, or whether the infectious properties are confined to special forms of tuberculous disease.

The investigations of Bollinger, Bang, and a great number of other observers many years ago established that the milk of cows suffering either from general tuberculosis or from tuberculosis of the udder contains tubercle bacilli. A few observers, such as Hirschberger and others, have experimentally demonstrated the infectious quality of milk derived from cows with incipient tuberculosis and non-tuberculous udders. Since the important discovery of tuberculin, however, there has been no examination into the question as to whether tubercle bacilli may not be present in the milk of animals which do not show any clinical signs of tuberculosis but which nevertheless are shown by their susceptibility to the tuberculin test to be tuberculous. A positive answer to this question was furnished in 1899 by the joint investigations of myself and Dr. Kempner. We found that tubercle bacilli may be present in the milk in cases of tuberculosis, latent, but revealed by the tuberculin test. If, then, the milk of such cows contains tubercle bacilli, it must, needs be regarded as infectious, and such milk must be held no less dangerous for the consumption of young animals than that of milk from cows with advanced general disease or with diseased udders. In these as well as in my subsequent experiments I tested the presence of tubercle bacilli in the milk by means of intra-peritoneal injection in guinea-pigs, as I consider this method to be not merely satisfactory, but indeed the only safe method. The alternative way to prove the infectious character of milk by feeding animals with it is unreliable, since the quantity of tubercle bacilli thus introduced in the course of one experiment or of several experiments is greatly inferior to the amount which the animals would actually consume within a given period of time as part of their food. In the long run even a very slightly infectious kind of milk is bound to produce the disease.

[1] A paper communicated to the British Congress on Tuberculosis, Section III., Pathology, including Bacteriology.

The presence of tubercle bacilli in the milk of cows that respond to the tuberculin test without showing clinical evidence of tuberculosis was proved in the same year by Ostertag in regard to mixed milk and by Adami and Martin in regard to the milk of a number of individual cows. A further proof in support of this theory was furnished by my observations last year on milk supplied to infants in Berlin. I found no tubercle bacilli in the milk taken from cows which had been regularly subjected to the tuberculin test, while the supply obtained from animals not subjected to this test contained tubercle bacilli though they showed no clinical symptoms of tuberculosis. My own bacteriological observations of former years, as well as the more recent investigations chiefly concerning the milk of cows with suspected tuberculosis of the udder, established the following facts:—

The detection of tubercle bacilli by means of microscopical examination of specimens of cream and sediment from centrifuged milk is unreliable, because the absence of acid-resisting bacilli from the specimens examined cannot be considered convincing as their number may be so small as not to be found on every slide examined under the microscope; whilst even a very small number of tubercle bacilli can be detected by animal experiment. Besides, in milk there occur bacteria which with regard to their growth, as well as to the effect which they have on the animal organs, are very similar to the acid-resisting bacilli which were found by Koch in butter, and which under the microscope are unfortunately very difficult to distinguish from tubercle bacilli. These bacilli were not only found by Petri, Beck, Santoni, myself, and others in the ordinary market milk, but we were also able to detect and to isolate them by animal experiments from specimens of milk obtained under aseptic conditions from individual cows. The above-mentioned discovery of the acid-resisting bacilli, so similar in their nature and appearance to tubercle bacilli, in the milk of cows suspected of tuberculous disease made by our observations some years ago has been recently confirmed by the experiments of Kühnau. This investigator was able, both in specimens of mixed milk and also in milk taken under aseptic conditions from individual cows, to prove by animal experiment the presence of these bacilli in from 20 per cent. to 25 per cent. of the cases examined. Whether these bacilli are secreted by the mammary glands or whether they enter the milk ducts of the frequently inflamed udders from without is still uncertain, and for the differential diagnosis of these bacteria is without importance. In the light of recent investigations we certainly need not be surprised to find these bacilli in the milk. Several years ago Severin found the same kind of bacteria in cow-dung, while Olt demonstrated their presence in the contents of the intestine of tuberculous as well as of healthy cattle. Moëller further succeeded in obtaining isolated cultures of these acid-resisting bacteria from the cow-dung as well as from the timothy grass used as fodder. The same kind of acid-resisting bacteria, or similar ones, have been recently detected by Cowie on the udder, and by Ludwig Neufeld in the mammary gland, of the cow. Besides these acid-resisting bacteria Nocard and Mollereau, Bang, and others detected, some years ago, saprophytic as well as pathogenic bacteria, especially streptococci, in the udder of cows suffering from mastitis. These discoveries were recently confirmed by the experiments of Ward, as well as by those of Reed and Ward. The last-named observers have even isolated streptococci along with harmless bacteria from the milk of cows which were apparently healthy, showing clinically no signs of mastitis. When the udders of the slaughtered animals were examined streptococci of the same kind were found to be present in all parts of them. The other bacteria, too, which were found in the udder after the cow was slaughtered proved identical with those previously isolated from the milk. That streptococci may be present in the milk a long time after the mastitis has disappeared has recently been proved by the experiments of Lameris and van Harrevelt.

In view of these facts the presence in cows' milk of the bacteria which resemble tubercle bacilli is, after all, not difficult to explain, as these microbes, as well as streptococci, can either enter the udder from the outer world through the teat, or they can be taken in with the food and absorbed by the blood and lymph-stream from the intestinal canal and carried thence to the udder. In the present state of our knowledge it is not yet certain whether these bacteria can be the cause of the mastitis, or whether, the mastitis already existing, the inflamed tissue merely furnishes a suitable nourishing medium for the development of the microbes. As these acid-resisting bacilli are sometimes visible in clusters in a specimen of centrifuged milk, a microscopical differentiation of these from the genuine tubercle bacilli, especially when both kinds are present mixed in one and the same specimen of milk, is rendered extremely difficult or even impossible.

The only reliable method of proving the presence of tubercle bacilli in milk which remains is, therefore, animal experiment—namely, the intra-peritoneal injection into guinea-pigs of a mixture of the cream and sediment of thoroughly centrifuged milk. The following interesting experiment made by Ostertag shows how very susceptible the guinea-pig is when subjected to intra-peritoneal inoculation. The milk of a cow with a tuberculous udder, 20 cubic centimetres of which being given to a guinea-pig by the mouth produced intestinal tuberculosis, was able to produce general tuberculosis when injected into the peritoneal cavity of guinea-pigs, even after it had been diluted 100,000 times. By comparative experiments I was, indeed, able to prove that the last milk obtainable from the udders of suspected cows gave positive results in regard to the presence of bacilli whilst the first milk obtained from the full udders was not able to convey tuberculous infection in the animals. It must further be noted that it is necessary to examine the suspected milk repeatedly and at various times, as a single negative result cannot be considered finally convincing. Although it is easy to prove the presence of a small number of tubercle bacilli by means of inoculation, the result of the experiments may be obscured where changes resembling tubercles are seen in the tissues when examined with the naked eye, but which in reality have been caused by the action of the above-mentioned acid-resisting bacilli. Their pseudo-tuberculous nature can easily be proved when examined under the microscope. But, as we have already seen, real tubercle bacilli may be found in the tissues along with the acid-resisting bacilli; it is therefore advisable to carry on, in addition to a histological examination, inoculation experiments with parts of the suspected tissues until positive results are obtained. Thus the process of diagnosing tubercle bacilli by means of experiments on animals may become very tedious and two or even three months may elapse before we are able to decide whether the milk of the cow suspected of tuberculosis really contains tubercle bacilli.

The presence of tubercle bacilli in the milk does not, as a rule, correspond to the extent of the disease in the animal, as we have already had occasion to mention. It must be admitted, though, that in cases of extensive general tuberculosis or tuberculosis of the udder the presence of tubercle bacilli in the milk may be expected. How very often the clinical diagnosis of tuberculosis of the udder meets with great difficulties, even in the hands of the most competent observers, I had an opportunity to convince myself in the course of my last year's observations. The milk of the cows in question, as well as the results of the clinical examination, were kindly placed at my disposal by Dr. Schütz, professor at the Veterinary School in Berlin, and Dr. Schroeder. I made it my task this time to carry on my experiments on the occurrence of tubercle bacilli in the milk only of such cows as have been proved by repeated clinical examinations to be suspicious or to show tuberculosis of the udder. These 10 cows, the milk of which was repeatedly examined microscopically and by animal experiment, have not been submitted to the tuberculin test. In experiments this year it has merely been wished to ascertain whether the clinical examination of a cow, especially of her udder, allows the inference that the milk of the animal is infectious. It would lead us too far to enter here into details of our experiments. I shall only mention the results of the examination of those cows which throw most light on the subject in question.

In one case where the clinical diagnosis pronounced the udder to be tuberculous the presence of tubercle bacilli was only detected by animal experiment; microscopical examination was negative. In another cow with the same diagnosis the microscopical examination of the milk repeatedly revealed a great number of acid-resisting bacilli, while the animal experiment gave negative results. The necropsy of this cow did not confirm the clinical diagnosis of tuberculosis of the udder; it revealed merely the presence of chronic interstitial mastitis. Inoculation experiments with portions of the suspected udder also failed. In two other cows, in one of which the diagnosis of tuberculosis of the udder was made with great certainty while in the other a

strong suspicion was entertained, microscopical examination repeatedly detected in the milk a great number of acid-resisting bacteria of the nature of which we could not be sure. We thought them at times to be real tubercle bacilli; at other times they seemed more like rod-shaped bacilli merely resembling tubercle bacilli. Inoculation experiments with the milk of these two cows produced in the animals experimented upon suspicious changes which were due to acid-resisting bacilli resembling the tubercle bacilli. Further inoculation with suspected tissues of these animals gave a negative result. Of special interest was a case where the clinical diagnosis of tuberculosis of the udder was confirmed by the post-mortem examination. Neither the microscopical examination nor the experiments on animals could show the presence of tubercle bacilli in the milk. The microscopical examination of sections of the tuberculous udder revealed numerous clumps of tubercle bacilli in the tuberculous interstitial tissue, while there were none to be found in the milk ducts.

From a review of these cases we arrive at the conclusion that the clinical diagnosis of tuberculosis, especially of tuberculosis of the udder, does not enable us to judge whether tubercle bacilli are secreted with the milk of the affected cows. For, on the one hand, our previous investigations, as is seen in the account of the same, have shown tuberculous disease of the udder sometimes to escape detection altogether, or simple inflammation may be diagnosed clinically, while later the histological examination, as well as the results of inoculation experiments with the milk and with portions of udder tissue, prove that it was clearly a case of tuberculosis of the udder. Delépine arrived at the same result in the examination of a cow the udder of which was not found to be tuberculous till examined histologically. The milk of this cow contained tubercle bacilli, although repeated clinical examination as well as the observation of the udder with the naked eye after the necropsy yielded no grounds for suspicion of tuberculous disease. Of course, it is not to be wondered at that the commencement of disease of the udder escapes detection when palpation is used.

On the other hand, the udder may be clinically pronounced tuberculous while both the necropsy as well as the histological examination clearly show that we have merely to deal with a case of interstitial mastitis or of cyst formation in the udder. This fact was not only proved by Dr. Kempner and myself, as may be seen from the above synopsis, but the investigations of Adami and Martin, as well as those of Delépine, illustrated by a series of interesting experiments, led to the same results. Kühnau, in his recent paper on the Extermination of Tuberculosis among Cattle, has further shown that streptococci, which not infrequently invade the udder, as seen before, are occasionally capable of producing changes closely resembling tuberculosis. A third possibility has been also demonstrated in the present year by my own investigations, in which I proved that even repeated inoculation of the milk may fail to show the presence of tubercle bacilli, though the clinical diagnosis of tuberculosis of the udder was confirmed by the necropsy, and though great numbers of tubercle bacilli could be detected with the microscope in the tuberculous interstitial tissue though not in the milk ducts.

The presence or absence of tubercle bacilli in the milk of cows with tuberculosis of the udder is, in our opinion, greatly dependent on the extent of the disease in the organ. It is easy to understand that in a case where the tuberculous foci in the udder are circumscribed and encapsuled the tubercle bacilli will not be able to enter the milk ducts with the same ease as they may do when the disease of the organ is diffused. From examination with the naked eye and under the microscope, as well as histologically, of a number of tuberculous udders which were kindly placed at my disposal by Dr. Reissmann, the director of the Berlin slaughter-houses, I was enabled to convince myself how very much the occurrence of tubercle bacilli in the milk depends on the extent and the local seat of the tuberculous changes in the udder tissue. In many cases of very advanced disease I was only able to detect the presence of tubercle bacilli in the fluid expressed from the milk ducts after having examined a great number of specimens. In several cases I failed to detect tubercle bacilli in the capillary milk ducts under the microscope, while in other cases the milk capillaries were crowded with bacilli. In view of the great variety of bacilli found in tuberculous udders, as seen in my investigations in this field, I venture to express a doubt whether the method (first recommended by Nocard) of harpooning does always furnish us with a sure means of judging whether in a doubtful case we are dealing with tuberculosis of the udder or not. Besides this the harpooning method has been pronounced recently by Kühnau to be not quite without danger to the animal.

So far we have seen that the clinical examination of milch cows as a means of inferring the presence of tubercle bacilli in the milk is, without the aid of auxiliary methods of research, both insufficient and unreliable. On the other hand, the method of demonstrating the presence of tubercle bacilli by means of experiments on animals may prove very tedious. There remains only the tuberculin test which is the sole quick and sure method. The tuberculin test is recommended by most of the distinguished authors along with the clinical examination as the best means of diagnosing and thus aiding the extermination of tuberculosis among cattle. It is, on the other hand, not difficult to understand that in view of the enormous spread of bovine tuberculosis the farmers should try to discredit tuberculin. But the great diagnostic value of tuberculin can scarcely be diminished by the fact that the failures in the diagnoses only amount to 2·9 per cent. (as Schütz proved) of all the cases subjected to this test. In cases where the diagnosis of tuberculosis has been made with great certainty by means of clinical examination the tuberculin test becomes naturally superfluous. This does away with the argument that about 10 per cent. of the cattle which fail to react to tuberculin nevertheless are tuberculous. These 10 per cent., as is well known, consist of highly tuberculous animals which have themselves produced and contain in their bodies so much tuberculin that they are unable to respond any longer to the tuberculin test: this argument is nevertheless brought forward again and again by the adversaries of our method. The tuberculin test should only be applied to animals which are suspected of tuberculosis, and when thus used failures in the diagnosis never occur, as I am informed by Nocard, who based his opinion on a prolonged experience in France. Bang, in his last year's treatise, also appears as a champion of tuberculin for diagnostic purposes; he still considers it to be the finest and safest means for diagnosing tuberculosis in animals in spite of the many opinions to the contrary.

We must point out the fact that the present scientific data with regard to the extermination of bovine tuberculosis clearly show this to be practically impossible without the aid of tuberculin. Naturally we must, in the first place, make a point of exterminating the cows affected with tuberculosis of the udder and general tuberculosis, since their milk is more than all other to be regarded as infectious. In the second place come the animals in which the clinical diagnosis can only be established by the help of tuberculin. These cows must first of all be separated from the healthy ones. The questions whether they should be killed and as to the proper time for doing so will depend on the quicker or slower progress of the tuberculous disease. That is to say, that of course not all the animals which react to tuberculin need be immediately slaughtered. We may therefore say that combined with the clinical and bacteriological examinations the tuberculin test furnishes us with the safest means of obtaining milk free from tubercle bacilli as well as of rearing cattle free from tuberculosis.

A CASE OF ACUTE DOUBLE PNEUMONIA TREATED WITH OXYGEN; RECOVERY.

BY G. E. RICHMOND, B.A., B.Sc., M.B., B.S. LOND.,
OF THE IMPERIAL YEOMANRY HOSPITAL, PRETORIA.

THE treatment of pneumonia, like that of most acute fevers, is chiefly symptomatic and therefore more or less unsatisfactory. The great things expected of the anti-pneumococcic serum have scarcely been realised and one is sometimes tempted to think that the course of the disease has not been favourably altered by its administration.

According to Dr. Andrew Smith[1] of New York in pneumonia the cocci do not enter the substance of the lungs, but are contained in the air vesicles, as in a test tube, where

[1] Twentieth Century Practice of Medicine, article "Pneumonia."

they flourish and produce their toxins, which by absorption cause the fever and prostration characteristic of the disease. The lungs in pneumonia give an acid reaction after death, said to be due to pneumic acid which by its accumulation in the air vesicles has been supposed to destroy the cocci and thus to bring about a sudden termination of the process. Now, it is well known that the pneumococci of Fraenkel do not flourish in an atmosphere of pure oxygen, and it was suggested some years ago that the administration of oxygen inhalations in the early stages of pneumonia might prevent the spread of the disease to parts of the lung which were still healthy and would probably be antagonistic to the growth of the cocci already present in the lungs.

Some years ago an interesting case in point occurred in the Miriam Ward of Guy's Hospital under the care of Dr. J. F. Goodhart, whose clinical assistant I was at the time. The patient was an old woman who was admitted for leucocythæmia, for which she was given inhalations of oxygen lasting 10 minutes three times a day. Suddenly she developed a high fever and definite signs of pneumonia consolidation appeared at the left base. Dr. Goodhart examined the case and, agreeing with the diagnosis, gave a very bad prognosis, pointing out that pneumonia was often the closing scene of such a chronic disease. The inhalations were continued, and, to the surprise of everyone, the pneumonia rapidly cleared up in two days' time. The only other treatment adopted was hot linseed poultices to the left side. The particulars of the present case are as follows.

A man, 23 years of age, belonging to Kitchener's Fighting Scouts, was admitted to the Imperial Yeomanry Hospital at Pretoria on July 23rd, 1901, suffering from pneumonia. He had been ill for two days on the train coming from Durban and was somewhat collapsed on admission. His temperature was 101° F., his pulse was 120, and his respirations were 60 per minute. The abdomen was distended and tympanitic. The spleen was not enlarged. No typhoid spots were present. The tongue was covered with white fur. There were sordes on the lips and the patient was in a typhoidal state. A very troublesome cough was present, with expectoration of thick white sputum mixed with bright red blood. The man complained of pain in his chest on breathing or coughing but no friction-rub was present. Breathing was rapid and laboured and at the rate of from 60 to 70 per minute. The slightest movement brought on a paroxysm of coughing which greatly exhausted the patient.

On examining the chest in front and in the axillæ and over the upper lobes behind there was harsh, loud, compensatory breathing, with absence of any adventitious sounds or bronchophony. Behind there was dulness of both bases up to the level of the ninth rib, and over this area there was bronchial breathing, with small consonating râles and bronchophony of cough sounds. Above the area of dulness on both sides the air did not enter well except in the upper lobes, where compensatory breathing was heard. The temperature rose to 103° at 10 P.M., but the patient was a little more comfortable.

The treatment consisted in the application of a pneumonia jacket and the administration of a mixture containing five minims of tincture of opium, four minims of liquor strychniæ, five minims of dilute hydrochloric acid, and one ounce of peppermint water every four hours; two ounces of brandy were also given daily. On the next day (July 24th) the signs of consolidation were extending upwards *pari passu* on both sides behind. In front the lungs were still quite clear. The temperature varied between 102° and 103·8°, the pulse was about 120 per minute, and the respirations were from 50 to 60. Dr. H. D. Rolleston saw the patient in consultation with me and agreed with the suggestion that oxygen inhalations should be given, to prevent if possible the spread of the infection to the upper lobes. These inhalations were ordered for 10 minutes every four hours on the morning of the 25th, and as there were no oxygen cylinders in the hospital nor in Pretoria the gas had to be prepared in a laboratory in the town and then brought up to the hospital in 40-litre gasholders. Great credit is due to Quartermaster-Lieutenant Bruce, R.A.M.C., for the despatch with which he procured oxygen and kept up the needful supply of 40 litres daily for the inhalations. On the 25th the temperature was 104·6°, the pulse was 120 per minute, and the respirations were 80. The oxygen inhalations were commenced on this morning and were continued until the 29th inclusive. The physical signs of consolidation (dulness, bronchial breathing and bronchophony, &c.) had extended upwards and the whole of the lower lobe on the left side and the lower and middle lobes on the right side were quite solid; the upper lobes remained quite free and compensatory breathing was heard all over their area. Examination was difficult as the slightest movement brought on a paroxysm of coughing and caused great exhaustion of the patient, his pulse and respirations becoming very rapid at these times. The respirations were from 90 to 110 per minute. There was a considerable amount of white frothy expectoration mixed with bright red blood and the cough was troublesome.

Dr. Rolleston saw the patient with me again; we both thought that he would probably succumb to his disease and suggested giving four minims of liquor strychniæ and four minims of liquor atropiæ hypodermically twice a day instead of the above mixture. A special sister was detailed for the case and her assistance did much to bring about a favourable termination. The injection was given that night for the first time and was continued until the evening of July 29th. A mixture containing 15 minims of tincture of digitalis was ordered every four hours and the brandy was increased to four ounces daily. On the 26th the temperature was 103°, the pulse was 124, and the respirations were from 40 to 60 per minute. The patient was more comfortable, the cough was less troublesome, and he had a fairly good night, but did not sleep much. There was no delirium. The back was not examined, but in both axillæ there were the physical signs of consolidation of the anterior bases of the lower lobes. The upper lobes remained free. The temperature fell slightly during the day and was only 101° at 4 P.M. No change was made in the treatment, oxygen still being given every four hours. On the 27th the patient was much more comfortable. The temperature fell from 101° at 4 A.M. to 98·6° at 8 P.M., the pulse-rate from 136 to 86, and the respirations from 50 to 36. After this the patient made a good recovery, although he had an attack of pleurisy with acute pain in both axillæ necessitating the administration of one grain of morphia hypodermically and the application of blisters. Another attack of pain occurred over the left base on the 29th and over the right base on the 30th. A definite friction-rub was heard in both axillæ and over the bases of both lungs behind, appearing first at the left base and then on the right side one day later. The man was now quite well with the exception of being debilitated.

On summing up the evidence for and against the value of oxygen as a prophylactic agent in the treatment of this case of pneumonia we find that there are certain points in favour of the patient quite apart from all considerations of treatment, and other points of grave prognosis which perhaps under less favourable conditions might have brought about a fatal termination. The three chief points in this patient's favour were: (1) he was a young man (23 years of age); (2) his constitution was fairly robust; and (3) the degree of toxæmia was not of that severe type which is sometimes met with giving rise to temperatures ranging from 105° to 106° or more. The highest temperature charted was 104·6°. But when these points have been brought forward there is little else that can be said in favour of the patient himself being able to combat the attack.

The points against a favourable termination were: (1) the pneumonia was double—a point of grave import always; (2) the disease progressed *pari passu* on both sides until the upper lobes alone were left intact; and (3) the patient fell into a typhoidal state, without delirium it is true, but with respirations of 80 per minute and a pulse varying from 120 to 136, and after the slightest exertion the respiratory rate was anything from 80 to 120 per minute. If this condition had lasted a day or two longer than it did the patient must, I consider, have died from lack of respiratory capacity, or if the upper lobes on either side had been attacked the subsequent dyspnœa must have killed him very shortly. From the time the oxygen was given the temperature began to fall, whilst before that it had been rising, the highest temperature (104·6°) being reached just before the first inhalation.

The difficulty of deciding whether it was the patient's own constitution or the benign influence of oxygen upon the course of the disease which brought about the successful termination is very apparent. But, personally, I think that the administration of the oxygen prevented the spread of the infection to the upper lobes and probably brought about an earlier termination of the process than would otherwise have occurred. It seemed to have acted also as a respiratory and cardiac stimulant. The hypodermic injection of strychnine and atropine was apparently of more service than administration by the mouth.

Pretoria.

A RÉSUMÉ OF MODERN VIEWS ON GASTRIC DIGESTION.

BY HENRY F. BELLAMY, M.D.

THE complex nature of the gastric mechanism renders the discovery of its inner workings a matter of ever-increasing toil to the experimental physiologist. To the medical man, unless his treatment is to be largely empirical and the results thereof uncertain, the need of a proper understanding and appreciation of the circumstances which control or influence the march of digestion in the normal stomach becomes each day more pressing. Fortunately, recent experience of the behaviour of the organ in health supplies him liberally with the means from which to form a rational basis for his therapeutical measures when called upon to remedy its distorted functions in disease. It is the purpose of the present article briefly to pass in review some important facts in connexion with this subject which have lately found light in the Lausanne laboratory.

Since the introduction by Pawlow of improved methods for accurately observing the phenomena of digestion on the living animal the physiology of the subject has made immense strides. The advance of knowledge has chiefly been in the direction of ascertaining how far the gastric function is influenced by the foodstuffs habitually ingested by the organism. Many years ago Schiff entered deeply into the subject of these influences, but, possessing no method of determining, even approximately, the amount of juice secreted under given conditions, his researches were necessarily restricted. For him there were but two possibilities—viz., either simple gastrostomy or infusions of the mucous membrane. The first proceeding enabled him to measure the power of the juice, as judged by the progress of digestion in the interior of the stomach; the second to measure the amount of pepsin to be found in the mucous membrane after the death of the animal. Nowadays, the classical operation of Pawlow affords a trustworthy method whereby the quantity and quality of the juice secreted under certain experimental conditions may be accurately estimated. As is well known, the operation consists in forming from the fundus of the stomach a diverticulum retaining its nerve-supply both from the vagus and sympathetic; its nerves being intact, this cul-de-sac works and rests in unison with the rest of the organ and furnishes a quantity of absolutely pure juice proportional to the extent of its surface. It is then possible, by digestions in vitro, to estimate the digestive capacity of juice received direct from the living animal.

Schiff's experiments and the conclusions derived by him therefrom are too well known to need recapitulation here. Those of the latter which more nearly concern our present subject may be summed up as follows. 1. That the gastric mucous membrane can, by a suitable and adequate meal, be entirely exhausted of its holding in pepsin. 2. That while certain "indifferent" foodstuffs exercise no influence whatever either upon the quantity or the quality of the juice secreted at the time of their ingestion there are others which possess in a marked degree the property of furthering the formation of pepsin. Among the 27 foodstuffs examined by him 12 proved themselves to be more or less positive in this respect; he accordingly termed them "pepsinogenes." They are as follows: (1) raw meat, (2) watery meat extract, (3) meat broth, (4) bone gelatin, (5) bread, (6) watery extract of bread, (7) dextrin, (8) certain peptones, (9) cheese, (10) watery extract of small peas, (11) watery extract of linseed, and (12) black coffee.

In contradistinction to these, the pepsin-forming substances, Pawlow's experiments on dogs have led him to the discovery of another class of substances possessing the property of calling forth the rapid and copious secretion of juice normally rich in acid, but producing no corresponding increase in the amount of pepsin; these substances are called by him juice-forming or "succagogues." Out of 16 foodstuffs examined the following eight were found to possess this property: (1) raw meat, (2) meat-juice, (3) broth, (4) meat extract (Liebig), (5) milk, (6) gelatin, (7) certain peptones, and (8) water (in large quantities).

Now, a comparison of this list with the preceding one reveals the striking fact that the majority of the substances described by Pawlow as "succagogues" are identical with those to which Schiff ascribed pepsinogenic properties. One would thus be led to suppose that these substances (or at any rate those of them which had been examined by both observers) were possessed of the double property, pepsin-forming and juice-secreting—or, in other words, that these two properties were identical. But a closer examination of the experiments of the respective observers brings to light the fact that these two classes of substances differ in one very important respect. Whereas the "pepsinogenes" of Schiff retain their action when absorbed from the rectum, the "succagogues" of Pawlow work only when brought into actual contact with the gastric mucous membrane, their action being entirely negative when administered per anum. It thus appears that the "pepsinogenes" exercise their influence through the agency of the blood and the "succagogues" through that of the nervous system.

It now occurred to Herzen that there might possibly exist substances possessing entirely or in great part the one or the other property. It so happened that Schiff had never experimented with Pawlow's most active "succagogue" (Liebig's extract), nor had Pawlow tested the "succagogic" properties of Schiff's principal "pepsinogene" (dextrin). With the object, therefore, of testing these two substances equally in both directions Herzen undertook a series of comparative experiments, of which the following may be considered typical. Pawlow's operation was performed upon a young, well-conditioned dog weighing 40 kilogrammes. The operation failed, however, in this respect—that in spite of every care the stomach fibres of the vagus appeared to have suffered injury. The possibility of this accident was suggested by the observations that the animal showed no trace of psychical reflex. As it happened, the absence of the latter was a distinct advantage, since its presence would have become a considerable hindrance to the determination of the possible secretory power of the "pepsinogenes"; indeed, it would have been necessary to counteract this disadvantage by an œsophagotomy, a proceeding demanding constant and elaborate care. The dog made a rapid recovery and the gastric cul-de-sac was found to carry out its functions satisfactorily.

It would be as well to diverge at this point from the account of the experiments performed on this animal in order to emphasise the importance of certain experimental conditions necessary to be fulfilled before the experiments themselves could be of any value. The holding in pepsin of the gastric mucous membrane at a given moment obviously depends upon the amount of pepsin formed by the previous digestion and how much of it has been secreted; in other words, on how much true pepsin (not propepsin) has remained over in the mucous membrane. If, then, the observer contents himself with merely taking the animal in a fasting condition, without regard to the quantity and quality of the last intake of food, he obtains, as chance may direct, a juice of less or greater activity. Since there may be pepsin remaining over from the previous digestion, by what method may the experimenter determine how much of the quantity present in the juice is newly formed as the result of the action of the substance experimented with, or even if this substance has in any way contributed to this new formation? The value of this quantity can only be accurately determined by ensuring the apeptic condition of the mucous membrane at the time of the experiment; this has been found to be the case when, from 14 to 18 hours before the experiment, a copious preparatory meal is given to the animal, the stomach being compelled in this manner to throw out the whole quantity of pepsin formed during the digestion of the meal. In order that its stomach might be in the apeptic condition in the morning, when the experimental meal was given and the juice collected, the Lausanne dog received its preparatory meal every evening between five and six o'clock. Some idea of its appetite may be gathered from the fact that the latter meal consisted, as a rule, of 1500 grammes of horseflesh boiled in water and given to the animal together with its broth and 3000 grammes of half-liquid polenta. The dog then received nothing except fresh water until between eight and nine o'clock on the following morning (16 hours after the preparatory meal) when the experimental meal was given. Now this latter meal had to be of such a nature that its main mass was composed of an "indifferent" substance—i.e., a substance the ingestion of which provoked the secretion of juice minimal in quantity and

activity. Both Schiff and Pawlow had been in the habit of employing for this purpose boiled meat washed out in running water, or coagulated albumin; after experimenting with various foods Herzen discovered an excellent material in polenta given in a half-liquid form. To this were added 50 grammes of the substance the properties of which it was desired to determine; when occasion demanded it the latter could also be administered per anum. The juice flowing from the gastric cul-de-sac was then received into a graduated vessel. In the summer of 1900 over 100 experiments were carried out in this manner on the same dog. The following are some of the more important results.

1. *July 30th.*—The preparatory meal was given on the previous evening at five o'clock. This morning at eight o'clock the experimental meal was given, consisting of polenta alone. The beginning of secretion was at nine o'clock. 10 cubic centimetres of juice were collected at 10 o'clock; the same digested 1·5 cubic centimetres of albumin. The result was little juice and very little pepsin.

2. *August 3rd.*—The preparatory meal was given on the previous evening at five o'clock. This morning at 8.30 the experimental meal, with the addition of 50 grammes of dextrin, was given. The beginning of secretions was at 8.50 A.M. 10 cubic centimetres of juice were collected at 9.10 A.M. and 45 cubic centimetres at 10.50 A.M. Digestion of the first, 10 cubic centimetres and six cubic centimetres of albumin; that of the last, 10 cubic centimetres of albumin. The result was very much more juice and considerably more pepsin.

3. *August 4th.*—The preparatory meal was given on the previous evening at five o'clock. This morning at nine o'clock the experimental meal, of polenta alone, was given. The beginning of secretion was at 9.20 A.M. 10 cubic centimetres of juice were collected at 9.30 A.M., when an enema of 50 grammes of dextrin in 200 grammes of water was given. Further 25 cubic centimetres of juice were collected at noon. The first 10 cubic centimetres digested 2·5 cubic centimetres of albumin, the last 10 cubic centimetres digested 10 cubic centimetres of albumin. The result was less juice than in the case of No. 2, but still more pepsin.

4. *August 15th.*—The preparatory meal was given on the previous evening at five o'clock. This morning at eight o'clock the experimental meal, with the addition of 35 grammes of Liebig's extract, was given. The beginning of secretion was at 8.50 A.M. The first portion (10 cubic centimetres) of juice was collected at 9.15 A.M. At 11 o'clock a further 25 cubic centimetres had been collected. The first 10 cubic centimetres digested three cubic centimetres of albumin; the last 10 cubic centimetres digested six cubic centimetres of albumin. The result was a large quantity of juice containing a moderate holding of pepsin.

5. *August 21st.*—The preparatory meal was given on the previous evening at five o'clock. This morning at 8.30 the experimental meal, of polenta alone, was given. The beginning of secretion was at 8.45 A.M. Five cubic centimetres of juice were collected at 9.25 A.M., when an enema of 20 grammes of Liebig's extract in 200 grammes of water was given. At 11.25 A.M. a further 10 cubic centimetres of juice were collected. The first five cubic centimetres digested one cubic centimetre of albumin (10 cubic centimetres = two cubic centimetres of albumin); the last 10 cubic centimetres digested eight cubic centimetres of albumin. The result was little juice with rather high pepsin holding.

It will be apparent from these five examples of Herzen's experiments that, when given in *large doses* by the mouth, the meat extract and dextrin act both as "succagogues" and "pepsinogenes"—i.e., that the copious ingestion of either of them suffices to produce the double effect of more juice and increased pepsin holding. It is obvious, however, that the administration of a dose of Liebig's extract sufficient to ensure its action in both these directions would of itself give rise to pronounced digestive disturbances, and that, instead of being assisted, digestion would quickly become deranged by this treatment. A similar drawback attends the employment of large doses of dextrin, the disagreeable flavour of which soon becomes objectionable to the patient. In order, therefore, to avail himself successfully of this line of treatment the therapist must take advantage of a further remarkable fact brought to light by Herzen's experiments. It is found that, when given in *small doses* the pepsinogenic property of the meat extract and the secretory property of the dextrine tend to disappear; in other words, owing to the diminished force of their converse properties, the meat extract and the dextrin tend respectively to become a true "succagogue" and a true "pepsinogene." By prescribing, therefore, small doses of one or both of these substances the therapist may modify, according to the needs of his patient, the quantity and composition of the juice secreted.

It has been mentioned earlier that the "succagogues" lose their secretory property when caused to be absorbed from the rectum. A brief glance at Experiment No. 3 in the foregoing series reveals a surprising fact in connexion with the administration of dextrin in this manner: it will there be seen that all influence in the direction of increased secretion of juice becomes lost, the pepsinogenic property of the substance being alone retained.

We have now to consider the question, Do there exist substances possessing *exclusively* the one or the other property? The latest work in the Lausanne laboratory points conclusively to a reply in the affirmative. Radzikowsky, Herzen's assistant, and Madame Mark-Schnorf, one of his pupils, have recently devoted their attention to this subject; the former has succeeded in discovering a true "succagogue" and the latter two "pepsinogenes." The work of Radzikowsky has shown that ethyl alcohol is a pure juice-expelling substance devoid of any trace of pepsin-forming properties. Experimenting in the manner above described, he finds that when the stomach has been thoroughly exhausted of its pepsin by a proper preparatory meal, the acid juice secreted by the action of alcohol is as good as pepsin-free. The alcohol, however, does not hinder the transformation of the propepsin into pepsin under the influence of a pepsinogenic substance, since, when dextrin is at the same time caused to be absorbed from the rectum, the secretion of a juice rich in pepsin is obtained. It is a remarkable fact that, when administered per anum, alcohol also exercises a certain succagogic influence. This action would appear to be an elective one on the gastric mucous membrane, since, unlike pilocarpine, its administration causes no secretion from the other glandular structures of the body. In ethyl alcohol we thus have an exception to the general rule above enunciated that juice-expelling substances work only through the agency of the nervous system; it is quite possible that further research will reveal others possessing a like property. The results of Madame Mark-Schnorf show that inulin and glycogen, carbohydrates closely allied to dextrine, even when given in large doses, are pure pepsinogenes, exhibiting no trace of secretory action. Another remarkable fact gleaned from the experiments of this observer is that the white, so-called pure dextrin, exercises no influence whatever, either pepsin-forming or juice-expelling, on the gastric mucous membrane, these properties being entirely confined to the yellow dextrine of commerce.

The practical importance of these researches may be estimated from the under-mentioned examples representing the average variations in activity of the stomach under the conditions already discussed. 1. After a meal consisting of "indifferent" food-stuffs such as boiled and washed-out meat or coagulated albumin, 10 cubic centimetres of juice may be secreted by the stomach in one hour; these 10 cubic centimetres will barely digest one cubic centimetre of albumin. 2. After a similar meal to which has been added a juice-expelling substance, 50 cubic centimetres of juice are secreted in one hour. A portion of 10 cubic centimetres taken from this juice will digest one cubic centimetre of albumin; thus the whole hour's secretion digests five cubic centimetres instead of one cubic centimetre. This is already a great advantage for the digestion. 3. After a meal similar to No. 1, to which has been added a pepsinogenic substance, barely 10 cubic centimetres of juice are obtainable in one hour, but these 10 cubic centimetres digest, say, six cubic centimetres of albumin. This also is a great advantage for the digestion. 4. Finally, after a meal similar to No. 1, to which has been added both a juice-secreting and a pepsinogenic substance, 50 cubic centimetres of juice can be collected in one hour, of which each 10 cubic centimetres digests from five to six cubic centimetres of albumin—i.e., in all from 25 to 30 cubic centimetres. Here the advantage for the digestion is enormous, it being from 25 to 30 times stronger than in the first case and from four to five times stronger than in the second and third cases.

These results tend to throw some light upon the fact that the juice furnished by a normal stomach is always in sufficient quantity and contains enough pepsin to bring about the digestion of an ordinary meal. The majority of

the foodstuffs contain secretory and pepsinogenic principles sufficient to call forth the secretion of a juice adequate for their digestion; those foodstuffs which do not initially do so nevertheless furnish them during digestion by virtue of the chemical changes which they undergo within the stomach. Natural feeding thus offers ample means for putting digestion in motion. Once started, its march becomes each moment more rapid until the culmen is reached when, owing to accumulation of its products, it begins to decline. There can be no doubt, however, that without unduly fatiguing the stomach its digestive capacity may be considerably raised by the ingestion of those principles the properties of which we have been considering. The importance of this fact becomes emphasised when dealing with the diseased or functionally inactive organ. Since their action is to raise the digestive capacity of the stomach two- or three-fold the administration of these substances becomes a therapeutical measure of immense value. It is not to be imagined that the clinical importance of their results remained unrecognised by Schiff and Herzen. Though their knowledge was limited to the power of the pepsin-forming substances yet they did not fail to realise the fact that in this class alone they possessed a potent means of control over the more commonly occurring forms of gastric derangement. Indeed, the favourable influence exercised on these cases by the "pepsinogenes" was repeatedly tested and confirmed by them. They found, for instance, that in obstinate cases of hyper-acidity almost immediate relief could be afforded by restoring the normal balance of acid and pepsin in the juice by the administration of a pepsin-forming substance. Thus, the excess of hydrochloric acid, formerly causing such distressing symptoms, was utilised for the benefit of the organism.

The advantages in other directions of this control over the composition of the juice are so obvious that their recapitulation becomes almost superfluous. There seem, however, to be pathological or semi-pathological conditions in which this simple form of treatment becomes more especially indicated. An instance may be found in pyloric constriction where, on account of the suspension or deficiency of intestinal digestion, malnutrition forms a prominent and troublesome symptom. In these cases, by means of suitable stimulation, a large proportion of the work performed by the duodenum may be thrown upon the stomach and by this means the general nutrition may be correspondingly improved. Again, in the fatigued condition of the stomach during convalescence from acute diseases, when, in spite of the relative integrity of the digestive function, the work of the stomach is not carried out with sufficient energy to maintain the increased metabolism demanded by the enfeebled system, the organ may be stimulated to increased exertion and, by its initiative, may incite the other factors in the digestive cycle to renewed activity. Further, relief may be obtained in obstinate cases of infantile dyspepsia due to the interruption or perversion of natural means of nutrition, with consequent emaciation of the child; in a large percentage of such cases malnutrition is the result of a resort to artificial feeding. The treatment of the acute dyspepsia arising from this cause by the simple means of mixing broth with the child's milk has long been known as an empirical preventive measure; but its *rationale* becomes apparent only when it is known that meat broth, by virtue of its activity in the double sense of pepsin-forming and juice-secreting, has the property of promoting the rapid and copious secretion of a juice rich in pepsin.

The simple and even nourishing nature of the substances which may be employed to further the production either of juice or pepsin is a great consideration in favour of their use under the circumstances above enumerated. Nature is, so to speak, assisted through the agency of her own materials; food is necessary for the maintenance of life, and it should be the aim of the therapist to remedy the cause of disordered digestion through the natural channel offered by alimentation rather than by the more artificial, but in no wit more scientific, resources of pharmaco-dynamics. Further, owing to the facility attending the administration of these pepsinogenic substances per rectum the stomach does not become surcharged with materials which can be equally well absorbed elsewhere; by this means also the whole energy of the remedial agents is secured to the performance of its allotted task, no part of it being held back by the process of digestion. Personally I have seen nothing but good result from this line of treatment. The combination of dextrin and Liebig's extract or of dextrin and alcohol is especially to be recommended. The efficacy of dextrin alone in cases of insufficient production of pepsin is surprising and in no case has its administration been known to produce unpleasant results. A very large proportion of the knowledge derived from these researches should, however, be applied in avoiding harmful modes of nourishment in those cases where the cause of the trouble is already recognised by the medical man. It is perfectly obvious, for instance, that in cases of hyper-acidity no substance known to be "succagogue" should be ordered to be taken, since the symptoms of the patient would only be aggravated thereby. By the observance of rules such as this a rational line of treatment can be marked out to suit the requirements of almost any type of gastric disorder.

Lausanne.

A DILATED SUPERFICIAL ABDOMINAL VEIN WITH A SUGGESTIVE HISTORY.

BY THEODORE FISHER, M.D., M.R.C.P. LOND.,

PHYSICIAN TO OUT-PATIENTS AT THE BRISTOL HOSPITAL FOR SICK CHILDREN; PATHOLOGIST TO THE BRISTOL ROYAL INFIRMARY.

THE accompanying illustration is reproduced from the photograph of a mentally deficient girl who attended the out-patient department of the Bristol Children's Hospital under my care. A large superficial vein was found running upwards over the right half of the abdomen. The history of its appearance is interesting and may be considered to lend some support to one of the theories of the causation of infantile hemiplegia. At the age of one year and seven months the child was seized with convulsions and remained unconscious for about a week, but no loss of power in either arm or leg was apparently present.[1] Towards the end of the week the right leg and thigh were swollen and the dilated abdominal vein was noticed to have appeared. The girl is said to have been bright and intelligent at the time of the attack and to have been able to say a few words. After recovery of consciousness no attempt was made to speak for more than two years and the girl, now 10 years of age, is still unable to read. She is of cheerful disposition and on good terms with her brothers and sisters, but has not sufficient intelligence to be entrusted by her mother with the most simple errand. No indication of weakness of either side of the face is present and there is no defect of sight or hearing. There is no weakness of either arm or leg and the knee- and elbow-jerks and reflexes are equal on the two sides. The vein seen in the illustration runs upwards from the centre of the right groin to the costal margin, where it divides into several branches which spread over the front of the right half of the chest, some reaching nearly as high as the clavicle. Below the point of division the vein nearly equals an ordinary penholder in diameter. The blood in it flows upwards. When emptied from above it remains empty, but it immediately fills on removing the pressure of the finger. The girl has five brothers and sisters, two of whom have attended the hospital as out-patients. One boy has had empyema following pneumonia, but mentally and physically they present no defect. In this girl also the head is well-shaped and she is tall rather than short for her age. There is nothing to suggest congenital syphilis. A further detail in the history may be worthy of mention. The mother attributes the attack of convulsions to the falling of the child into a dirty stream about three weeks before their onset. The child was nearly drowned, and after being pulled out she vomited a considerable quantity of water which had been swallowed.

In this case there has obviously been blockage of the

[1] Recently in going through my notes I discovered that this girl had been seen by me in August, 1896. The history then given by the mother in the main is the same as that recorded here, but a few additional facts of importance are mentioned. At the onset of the unconsciousness there are said to have been twitchings of the right side of the face and the mouth was drawn to the right side. Jerking movements were also present in the right arm and the right leg. The child could not walk for five or six weeks after the attack and then limped on the right side. At the time she attended the out-patient department she was said to be using the left hand in preference to the right, but no weakness of the grasp of the right hand could be detected. She was then commencing to say a few words, but was said to have been able to speak better before the attack, since which more than three years had elapsed.

external or of the common iliac vein. Such blockage of acute onset may most reasonably be attributed to thrombosis. At the time that the obstruction of this vein occurred there were convulsions followed by unconsciousness of a week's duration which terminated in permanent mental defect. The association of acute cerebral symptoms with mental defect as a sequel points to some definite lesion in the brain.

An enlarged superficial abdominal vein in which the blood flows upwards. The child is mentally weak, and the cerebral defect dates from an acute illness which was followed by the appearance of the enlarged vein.

The evidence of thrombosis of a vein within the abdomen strongly suggests that the primary cerebral lesion was also a thrombosis.

No hemiplegia was present in this case and the lesion was probably outside the motor area. Apparently, however, thrombosis of a vein in the region of the motor area need not occasion hemiplegia. I have made a necropsy upon a case of death from broncho-pneumonia in a boy, aged four years, where the left cerebral vein was distended with a pale stratified thrombus, yet no weakness of either side had been noticed during life. Although the vein was completely blocked and the deposition of clot had apparently been taking place for several days before death the disturbance of the neighbouring circulation had not been great. There was little congestion of the pia-arachnoid and no softening of the cerebral substance was present. The morbid appearances were very different in a case where veins situated over the parietal lobe, passing up to the superior longitudinal sinus, had become thrombosed. There the swelling and softening of the convolutions were very great. In this second case hemiplegia was present. The thrombosis occurred as a complication of ascites due to cirrhosis of the liver in a girl, aged 12 years.[1] In these two cases thrombosis of cerebral veins occurred as a complication, not as the primary disease, and consequently they do not necessarily lend support to the theory that hemiplegia of acute onset occurring in a healthy child is due to this cause. In one of the cases cultures from the thrombosed vein showed streptococci and in the other the thrombosis was probably secondary to the absorption of organic bodies contained in the peritoneal effusion which was disappearing at the time of onset of the hemiplegia. Cultures taken from thrombosed vessels in the great majority of instances show micro-organisms to be present. It is easy, therefore, to understand that when a child is suffering from some disease in which micro-organisms can readily obtain access to the circulation thrombosis of veins and arteries may occur, and it is not surprising that in a few cases in which hemiplegia in children has been present as a complication of acute disease thrombosis of a cerebral artery or of a vein has been found to have been the cause.

Hemiplegia of acute onset in an apparently healthy child is more difficult to explain. If the paralysis be due to a blood infection resulting in thrombosis of a cerebral vessel one would suspect some indication of ill health before the onset of the acute cerebral attack. Generally, however, the child is described as being strong and well at the time of the onset of the convulsions which usher in the hemiplegia. Yet apparently other manifestations of a blood infection, such as purpura, may show themselves suddenly, and one would think that the normal condition of the blood must be much impaired before a rigor can take place, but when a rigor is a symptom of commencing acute disease it has rarely been preceded by any feeling of ill health which has attracted the patient's attention.

It is of some interest to note that in the present case the child swallowed a considerable quantity of dirty water a short time before the onset of the cerebral affection, and it is not unreasonable to suppose that some organisms contained in the water were the cause of the thrombosis.

It may be added that, if thrombosis due to a morbid blood condition be allowed to be a probable cause of hemiplegia in an apparently healthy child, it is more easy to believe that such thrombosis occurs in a vein than in an artery. It must be remembered, however, that thrombosis of cerebral arteries as well as of veins has been found to occur as a complication of disease in children. I have met with both conditions in the post-mortem room. In the above case, although there was obviously thrombosis of a vein within the abdomen, if thrombosis existed also within the cranium it does not necessarily follow that the vessel affected was a vein. When the blood presents a liability to clot during life, thrombosis may sometimes arise in a vein in one place in the body and in an artery in another. In this case it cannot be proved that thrombosis occurred in either a cerebral vein or an artery, but it may be again mentioned that consideration of various points in the case seems to indicate the probability of such a lesion having been present.

Yet while no evidence of hemiplegia remains, the existence of cerebral defect shows that the brain has suffered injury. The additional facts mentioned in the footnote seem to show that weakness of the right side was at one time present. The occurrence of such injury as the sequel of an acute cerebral attack in which ante-mortem clotting in a cerebral vessel was very probably present may be considered to lend support to the thrombosis theory of the causation of infantile hemiplegia.

Bristol.

[1] Notes of both of these cases were read before the Society for the Study of Disease in Children in November, 1900 (THE LANCET, Dec. 8th, 1900, p. 1653). See also Brit. Med. Jour., July 6th, 1901.

THE PROSPECT OF CURE IN CANCER.

BY HORACE MANDERS, M.D. BRUX., F.R.C.S. ENG.

CANCER is a disease chiefly of the grand climacteric, when youth has attained its old age and the organs especially pertaining to that epoch are beginning their decadence, so, with the lessening supply of the vital fluid to those parts whose function is no longer needed in the economy come diminished vitality and a more feeble resistance to adverse influences introduced from without. So beautifully harmonised is this decadence in general that there just remains sufficient vitality to maintain the negative energy of resistance, but not enough to produce the active energy of function until physiological atrophy is arrived at. So long as these two balance each other in the normal proportion of decadence the system is protected, but should anything cause a disturbance of the harmony those parts in which the equilibrium is upset become open to assault and invasion from without. It is not my object here to enter upon the causes that may disturb the balance.

Some remedies are designed to act against the *origo mali*, whatever that may be—plasmodium, zyme, or enzyme—and which will be determined eventually, but the great point in

the treatment of cancer is to direct our attention to the natural forces inherent within the body.

It is a matter of common knowledge that the secreting power of cells can be influenced by the action of certain drugs acting on their protoplasm. Pilocarpine, for example, and arsenic have a beneficent action, but electricity alone is capable of directly and profoundly affecting the molecular changes that go on within the cells, of acting as a powerful tonic and restorative to the protoplasm itself whereby metabolism is promoted and resistance to adverse influences is greatly augmented. The immediate effect of this is to restore the lost equilibrium.

The term "electricity" comprises much, but the particular form of electricity only that affects cells so profoundly modified as are those of cancer is the current of high frequency and high potential discovered by Tesla and first introduced into therapeutics by d'Arsonval. It is now nearly two years ago (November, 1899) that I advocated the use of these currents in the treatment of pulmonary tuberculosis in combination with the open-air treatment. On account of the outbreak of the war in South Africa I was called away from pursuing further studies in that direction, but the successful results obtained by Mr. Chisholm Williams in 43 cases of phthisis treated by him recently by these currents are so clear that there can be no possible doubt in the mind of anyone who has observed the cases under this treatment that the protoplasms of the various cells of the body are marvellously vitalised and resuscitated, to the extent that they are once more able to repair the consequences of invasion and to resist attack. No doubt the leucocytes also are stimulated to secrete suitable alexines. I would wish to point out that the good effects of the Tesla currents are not limited to tuberculosis of the lungs only, but that if applied locally through a highly exhausted unipolar glass tube to tuberculous affections of joints and other parts a result equally satisfactory may be expected.

In cancer we may not have to deal with an invading microbe, yet it is evident that some malign source is at work whose influence the natural defensive powers of the body have become unable to resist, and it is only reasonable to infer from analogy that if these inherent powers could be re-vitalised to the extent that generally obtains in the equilibrium of health, as has been done in tuberculosis, then there is a definite prospect of a cure for that even more intractable disease cancer. If these inherent powers did not exist we should all fall victims, as it is unreasonable to suppose that we are not constantly exposed to the source of cancer just as we are to that of tuberculosis, of which we are now well aware.

Two cases have already been recorded, one in America and the other in the *British Medical Journal*, in which cancer has been arrested by means of the x rays, and I am acquainted with a third in which the improvement has been marvellous; but the treatment has not been without its disadvantages, and I am very strongly of the opinion that it is not the ultra-violet or x rays that produced the result, but that the real agent was the oscillatory violet rays which are generated at the same time as the former but are few in quantity and are masked by the greater quantity of the x rays. With Tesla's currents, run from a solenoid resonator into a unipolar highly exhausted glass tube as used by Tesla, one finds an enormous number of these violet rays given off with a few x rays—so few as to be a negligible quantity. Now, these violet rays, of tremendous speed of alternation from oscillation, amounting to millions per second, possess the advantage of being very easily applied, locally, to very small surfaces of the body—an advantage which is not possessed by the x rays, as these need, for local application, a considerable arrangement of covering for the protection of adjacent parts, otherwise severe burns are probable. Also it is impossible to charge the body as a whole with the x rays, a matter which is quite easy when the violet rays of the solenoid are used, whereby the protoplasm of the cells throughout the body is stimulated in its molecular action. It is well known to x-ray workers that after a little use a greater resistance is set up in the Crookes's tube and that rays of a different character are produced; in fact, the rays emitted from a Crookes's tube at different speeds of alternation, resistances, &c., are not yet thoroughly understood, or sifted for the different work expected from them.

It is quite probable that there is more than one cause of the various forms of cancer, and that this is the case I am inclined to think from the results of the yeast treatment in my hands, sometimes so efficacious in arresting this disease, at other times with little or no effect. Therefore I think it unwise to limit oneself to any one form of treatment, but I am of opinion that in these currents of high potential and exceeding frequency we have a means, hitherto unknown, of stimulating the vital energy of cells and of enabling them to utilise, by taking into their protoplasm, auxiliary remedies of which hints have been given, and that sometimes one and sometimes another, when used in conjunction with these currents, will be found to be the particular one needed. The progress of my cases undergoing this treatment is already most encouraging.

Bentinck-street, W.

A CASE OF PNEUMOTHORAX SHOWN BY THE ROENTGEN RAYS.

BY ERNEST W. MARTIN, M.B., CH.B. EDIN.,
RESIDENT MEDICAL OFFICER, CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK, E.

THOUGH within the last year a large amount of work has been done with the x rays in connexion with medical diseases of the chest, as far as I can ascertain up to the present time no photograph of the chest in the condition of pneumothorax has been taken. The case I obtained the negative from was one of pneumothorax in connexion with caseous tuberculosis, and the photograph is of interest as showing more accurately than physical signs could demonstrate the actual condition of affairs within the thorax and the displacement of the viscera.

The patient, a man, aged 22 years, was admitted into the City of London Hospital for Diseases of the Chest, Victoria Park, on August 5th, 1901. He gave a history of continuous cough for the last two years, together with loss of flesh, sweating, and shortness of breath. On examination he was found to be suffering from chronic phthisis, both lungs

1. Collapsed left lung. 2. Air in pleural cavity. 3. Tuberculous lung. 4. Right margin of heart. 5. Right dome of diaphragm, normal. 6. Depressed left dome of diaphragm. The heart is not seen at all to the left of the vertebral column, the shadows of the vertebræ being quite clear. The intercostal spaces on the left side of the chest are broader than are those on the right.

being affected throughout. The apex-beat was in the fifth intercostal space one inch internal to the vertical nipple line. The history of the attack of pneumothorax was as follows. On April 12th at 5 P.M., after a fit of coughing, he was suddenly seized with severe pain in the left side, accompanied by dyspnœa, the latter not being very marked. On examination it was found that the percussion note over the apex posteriorly was resonant, but that there was no displacement of the heart; at 7 P.M., after another fit of coughing, the patient had more pain and the dyspnœa

increased to orthopnœa. On examination it was then found that the percussion note was resonant all over the left side of the chest back and front, the cardiac dulness was obliterated, and the heart's impulse could not be felt at all to the left of the sternum. The bell sound was easily obtained. The patient died on April 13th from syncope. The skiagram was taken shortly after death; an exposure of three minutes was given, the tube being at a distance of two feet above the chest.

At the necropsy on puncturing the chest-wall over the left pleural cavity gas escaped under pressure. On opening the chest the cavity of the left pleura was found to contain a large quantity of gas, the lung being collapsed and compressed and the heart being displaced so as to be almost in the middle line. The pneumothorax extended throughout the pleural cavity; there were a few recent adhesions at the apex. No fluid or pus was present. The perforation had taken place posteriorly and above the root, there being a small slit-like opening leading into the lower part of an apical cavity. The lungs showed caseous tubercle throughout. There was no recent pleurisy.

Remarks.—In a case such as the above there is of course no difficulty in making a diagnosis of the condition present and the chief interest of the skiagram, apart from what may be learned from it by the practical x-ray worker, lies in the very clear demonstration of the position of the displaced viscera in a case where the lung is not firmly bound by adhesions and where there is a positive pressure within the pleural cavity. The flattening and downward displacement of the diaphragm could hardly be made out by physical signs; the position taken up by the lung and the complete displacement of the heart from the left side of the chest are all clearly shown in the skiagram. Another point well brought out is the broadening of the intercostal spaces on the side of the pneumothorax. In addition the skiagram shows the shadows thrown by caseous tubercles, the portion of lung immediately above the right arch of the diaphragm being the only clear piece of lung shown.

For permission to publish these notes I am indebted to Dr. Clifford Beale, under whose care the case was.

P.S.—Since sending this case to THE LANCET I have shown in the museum of the British Congress on Tuberculosis five cases of a similar condition; and I believe other cases are on record, one being shown by Professor Béclère of Paris.

Victoria Park, E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF EXTRA-UTERINE GESTATION; RUPTURE INTO THE GENERAL PERITONEAL CAVITY; OPERATION; RECOVERY.

BY D. LLOYD CLAY, M.R.C.S. ENG., L.R.C.P. LOND.

ON April 19th, at 5 A.M., I was called to see a woman, aged 31 years, who presented all the signs of internal hæmorrhage. Her face was deadly pale and her pulse was very quick and almost imperceptible. She was bathed in cold perspiration and she complained of agonising pain in the lower part of the abdomen, chiefly on the right side, and also about the right shoulder. On examination slight distension of the lower part of the abdomen could be made out and there was great tenderness in the right iliac region, the slightest touch causing the patient to call out. The breathing was very shallow and purely thoracic. Per vaginam I was able to make out a little fulness on the right side and behind the uterus. The history of the case was as follows. For six weeks she had suffered from irregular hæmorrhages accompanied by shooting pains; the discharge would sometimes last two or three days. At times she passed some solid material. Previously to the appearance of these hæmorrhagic discharges she had not "seen anything" for six weeks. From the above symptoms and the history I diagnosed extra-uterine gestation (three months) with rupture into the peritoneal cavity, and I called in Dr. W. Fell who confirmed the diagnosis and advised immediate operation.

At 7 A.M., after the patient had rallied slightly, I accordingly opened the abdomen midway between the pubes and the umbilicus, the incision being three inches long. On reaching the peritoneum that membrane bulged into the wound and on being opened a quantity of blood escaped. I then easily reached the gestation sac, transfixed the base with an aneurysm needle threaded with stout silk, and tied it in two places. One ligature was cut short, while the other was thrown round the whole pedicle and tied again and the sac was removed. All clots were removed, Douglas's pouch was well sponged out, and the abdominal cavity was washed out with large quantities of boric lotion, saline solution being used at the finish. The abdominal wound was now stitched in the usual way and the patient was put back to bed, having stood the operation, which lasted 35 minutes, very well. Vomiting was very troublesome for the first 24 hours, and the patient was given ice to suck and small doses of morphia hypodermically. The patient did very well up to the nineteenth day, when I was again sent for. On examination some fulness and tenderness could be made out in the lower part of the abdomen. The temperature was 102·6° F. I now felt sure that there was some collection of pus somewhere in the pelvis. On the twenty-first day there was great abdominal distension, together with retention of urine. The temperature was 101°, the pulse was quick, and great pain was complained of. Per vaginam a fluctuating swelling could be made out in Douglas's pouch, pushing the uterus upwards and forwards, the cervix being felt right above the pubes. The posterior vaginal wall was very tense and bulged externally. Pelvic abscess was diagnosed, and I decided to make an opening as soon as possible per vaginam. On examination per rectum, however, the abscess was found pointing and on the verge of bursting about three inches above the anus. Slight pressure by the finger was sufficient to open the abscess and a large quantity of pus mixed with blood escaped. There was immediate relief; the temperature dropped and the patient recovered without a bad symptom.

I report the case on account of its successful result and because it was so very heavily handicapped. The operation had to be done in a great hurry and in a private house—where, of course, strict antiseptic principles could not be carried out. The patient was so blanched that not a single vessel had to be seized on cutting through the abdominal wall.

Wellington, New Zealand.

A CASE OF PAGET'S DISEASE OF THE NIPPLE OCCURRING IN A YOUNG SUBJECT.

BY RICHARD ALCOCK, M.D. VICT.

SOME time in 1892 I was consulted by a woman on account of an eczematous condition of the right nipple and areola. She was 28 years old, was married, and had borne children. She came to me from time to time afterwards, but no treatment had any effect. In 1893 I advised her to have the entire breast removed. The condition at that time was as follows. Occupying the situation of the areola was a slightly raised eczematous surface, moist, red, and exuding a discharge clear, yellow, and viscid. There was no ulcer, strictly speaking, the surface of the sore retaining a cutaneous appearance. The nipple itself was non-existent; as the patient expressed it, "it had scaled away," probably a literal statement of actual fact. The condition was sharply limited to the region of what was formerly the areola. I advised complete removal on account of the known tendency to carcinoma in these cases and also because a nippleless mamma would be a useless appendage.

In November, 1893, the patient was removed to the Goole Cottage Hospital and the operation was performed by my friend Dr. Macdonald Brown, surgeon to that institution. The after-history was uneventful. Up to the present time (1901) there has been no recurrence and she has enjoyed good health since and given birth to further children.

I prepared sections for the microscope, from one of which a drawing was made under a low power (vide illustration). It will be seen that there is a considerable proliferation of the epithelium downwards into the subcutaneous tissues in the form of branching and anastomosing columns of cells. The vascular papillæ reach up as far as the free surface and no doubt account for the exudation. On the surface there are abundant evidences of loss of substance by shedding of

the superficial epithelial cells. The morbid conditions were limited to the cutaneous tissues. The condition is clearly a neoplasm, simulating epithelioma to a certain extent, but differing from it in many respects, notably in the entire absence of "nests." I have thought it worth while to place

a, Epidermis. *b*, Papilla. *c*, Dermis.

the case on record on account of the youth of the patient and also on account of the microscopical characters which I have not seen described as here presented in any text-book to which I have immediate access.

Goole.

HÆMORRHAGE DUE TO INCOMPLETE ABORTION.

BY F. W. ERNEST HUTCHISON, M.B., C.M. GLASG.

A WOMAN, aged 36 years, who had been married 10 years and was the mother of four children, consulted me in January last, complaining of losing blood at different times, first dating the symptom from a miscarriage which she had had six months before. She was two and a half months pregnant, she said, when the miscarriage took place. Just before consulting me she was losing a much greater amount of blood than previously. She was extremely anæmic and weak. On examination blood could be seen escaping from the os uteri. The sound passed three inches and the uterus was slightly enlarged. The patient losing so much blood and being so weak I decided at once to explore the interior of the uterus. This I did in the usual way by Hegar's dilators, and passing the finger inside I at once detected a number of small lumps studded over the surface. These were removed by the finger-nail chiefly and also by Récamier's curette. Afterwards I applied pure carbolic acid to the endometrium. Subsequently the patient menstruated normally in every respect.

Kelvedon, Essex.

LONDON TEMPERANCE HOSPITAL.—A stained-glass window has been recently unveiled at the London Temperance Hospital by Mr. Alderman Strong, chairman of the board of management. The window is the gift of the brother of a patient, is the personal work of the donor, and was given as a token of appreciation of kindness and benefits bestowed by the hospital staff. The window is pictorial in design, the central figure being that of Christ, surrounded by those in fetters, the suffering, and the young; underneath is inscribed the text, "Come unto Me, all ye that labour and are heavy laden." On either side are angels praying and shields bearing the words, "Amor," "Pietas," "Patientia," and "Fortitudo," surmounted by angels in glory; the canopy is white and gold. Among those present were the Rev. Dawson Burns, D.D., Colonel Sheffield, L.C.C., and the members of the board of management.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas e morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF TUMOR CEREBRI IN WHICH ROTATION OF THE TONGUE WAS PRESENT.

(Under the care of Dr. J. ROSE BRADFORD.)

THE abnormal movement of the tongue described in the case recorded below is remarkable and difficult to account for by the light of our present knowledge. In cases of lingual paralysis it is very desirable to determine, when possible, which individual tongue muscles are paralysed, both intrinsic and extrinsic. For the notes of the case we are indebted to Mr. A. Ernest Jones, late house physician.

A woman, aged 37 years, was admitted into University College Hospital on Jan. 5th, 1901, with the following history. She had suffered from headache, which was not localised, for two years. Attacks of vomiting had occurred every month for the past five months, lasting for three days. These attacks had no relation to food. There was no nausea. She had had fits for three years. The convulsions started in the right arm or leg and never became general. They were accompanied by no loss of consciousness and could be stopped by sitting on the twitching hand. She had had two "strokes." The first "stroke" occurred on August 21st, 1899, when she became unconscious after several fits and was comatose for six weeks. There was no vomiting. The right arm, leg, and face were found to be paralysed on the tenth day. The second "stroke" occurred on Dec. 26th, 1900, and left her weak in the left side of the face. Her memory had been failing for 18 months.

On admission there were slightly marked cerebral hemiplegia on the right side, involving the face, and fine occasional tremor in the right hand, which was increased by exertion. Sensation was unaffected. The movements of the eye and the pupils were natural. The palate moved well. On opening the mouth the lower jaw distinctly went over to the left, and the left masseter was weak. The tongue, when protruded, went to the left, but not more than would be accounted for by the jaw movement. It, however, rotated in such a manner that the dorsum looked upwards and to the left. It was horizontal when at rest and showed no atrophy or trophic changes. Well-marked optic papillitis with commencing atrophy was present, the inflammation being more marked on the left side than on the right. The sight was unaffected. There was no other evidence of involvement of the cranial nerves. The sphincters were unaffected. The intelligence was dulled.

The patient died seven weeks after admission. During that time she had 50 or 60 fits, no aura occurring. The only changes in the physical signs were that the rotation of the tongue became less marked in the last two weeks of life and rigidity of the left limbs supervened a few hours before death. Twitching of the right face also frequently occurred.

Necropsy.—At the post-mortem examination a subcortical tumour was found on the left side of the cerebrum. It was five or six centimetres high; it had its centre opposite the arm area, involved the corpus callosum, and was evidently pressing on the opposite hemisphere. Microscopically it was a round-celled sarcoma.

Remarks by Mr. JONES.—I have been unable to find a case of rotation of the tongue occurring clinically anywhere recorded. Beevor and Horsley[1] state that on stimulation of a localised area of the cortex in the lower part of the ascending frontal convolution opposite the upper end of the inferior transverse frontal sulcus of Eberstaller the tongue rotates in such a manner that its dorsal surface becomes applied to the cheek of the same side. This movement

[1] Philosophical Transactions of the Royal Society, vol. 185B., Part i., 1894, pp. 54–58.

was not obtained by the same authors[2] on stimulation of any part of the internal capsule. The movement therefore appears to have been described experimentally before it was noted clinically.

Applying the above knowledge to this case, as the centre for this movement was assumedly paralysed, when the tongue was protruded one might expect the opposite centre to have unopposed action and to rotate the tongue so that its dorsum was applied to the right cheek, whereas what really happened was that its dorsum was applied to the left cheek. This anomaly is parallel to the difficulty that meets the clinician with respect to the experimental and clinical deviation of the tongue—namely, that appropriate stimulation of the left cortex causes the tongue to deviate to the right, whereas in hemiplegia from tumour, &c., which destroys that centre, the tongue also deviates to the right when the patient is asked to protrude it. Beevor[3] has suggested the following explanation of the apparent anomaly. Stimulation of a localised area with an electrode is not parallel with asking a patient to put out his tongue, but rather with asking a patient to touch one cheek with the tip of his tongue, so that it is not justifiable to antagonise the two facts although they apparently contradict each other. In health protrusion of the tongue is a bilateral movement, but in disease it is not known by what movements protrusion is effected, and up to the present no complete explanation has been offered as to why the tongue deviates to the paralysed side in hemiplegia. The presence of the rotation phenomenon clinically suggests a lesion in or near the cortex, but as to the side of the lesion I do not think that one can at present dogmatise. I am indebted to Dr. Rose Bradford for permission to publish the case.

NORFOLK AND NORWICH HOSPITAL.

A CASE OF MYOSITIS OSSIFICANS.

(Under the care of Dr. F. W. BURTON-FANNING.)

WITH our present absence of knowledge of the etiology of myositis ossificans the record of every case is desirable. In one respect the following case differs from most of those which have hitherto been reported; there is very distinct evidence of the occurrence of the disease in the patient's father. Dr. W. P. Herringham[4] says: "All agree that it is congenital but not hereditary"; and the absence of any history of inheritance of the disease is certainly marked in most cases. For the notes of the case we are indebted to Mr. A. Ll. Vaughan, late house physician.

A man, aged 33 years, was admitted into the Norfolk and Norwich Hospital on account of increasing difficulty in opening his mouth. He gave the following history. At the age of eight years his left shoulder gradually became stiff without any previous injury or pain. The stiffness had only progressed slightly. At the age of 12 years the movement of the right knee became impaired and had gradually become worse till all power of movement had gone. Following this in order came stiffness to the left hip, sides of the chest, and lower part of the back. The immobility of these parts had been slowly increasing since the onset. At the age of 26 years the right arm from the shoulder downwards was much swollen, the skin becoming red and tender. The inflammation was so acute that the arm was thought to be poisoned. The swelling, however, passed off and then the arm was found to be absolutely fixed in the extended position while the movements at the shoulder—previously impaired—were further diminished. Flexion and extension remained at the wrist, but the forearm could only be supinated through half the natural extent. Two years later stiffness of the right hip was noticed. During the winter of 1898 difficulty in opening the mouth began but passed off during the summer, only to return, however, in the following winter in a worse degree. There was some slight improvement in the summer of 1900, but the trouble had gradually increased since. Since the legs became affected the patient had had numerous falls, but had never seriously hurt himself nor could he attribute an increase of his malady directly to any injury. He had been remarkably free from any other disease except for constant trouble with his eyes, which were affected with ciliary blepharitis.

[2] Ibid., vol. 181B. 1890, p. 138.
[3] Diseases of the Nervous System, 1898, p. 233.
[4] Transactions of the Clinical Society of London, vol. xxxii., 1899, p. 3.

The patient's family history is worthy of special note. His grandfather, who was a healthy man and lived to the age of 60 years, had two sons, of whom one was in perfect health and had no congenital deformities; the other one was the father of the patient and suffered from myositis ossificans, dying at the age of 33 years from an accident. In this case the disease began at the age of 15 years in the right arm and was attributed to an injury from a fall. The disease had steadily progressed, but had not reached the same degree as that found in the patient. This man had a congenital deformity of the thumbs, there being no joint beyond the metacarpal one.

The present patient was a spare man with an unhealthy look due to the inflammation of his eyelids. The face was directed downwards and forwards due to slight flexion at the hips and fixation of the vertebræ. The left foot was kept about six inches in advance of the right and there was slight flexion of the left knee. Progression was effected by sliding the left foot forwards by using all the power of flexion that remained in the left knee and ankle and then dragging the right leg up to it.

Examination of the muscular and osseous systems showed that both erectores spinæ were almost completely replaced by bone which had retained the natural outline of the muscle and which prevented any movement whatever in that portion of the spine over which the muscles lie. The deep muscles at the back of the neck were similarly affected and the only movements along the central axis of the body left to the patient were a slight rotation and flexion of the head. Both of these movements were limited. There were bony plates between several of the ribs on each side and along the anterior border of the left quadratus lumborum was a hard band fixing the twelfth rib to the crest of the ilium. These growths together prevented any movement of the chest except in the region of the first two ribs which moved slightly on respiration. The teres major and pectoralis major on each side had their distal halves bony and by them shoulder movements were nearly prohibited. On the right humerus immediately above the olecranon fossa was a bony mass of about the size of a walnut which involved the whole thickness of the triceps, binding the muscle to the bone and preventing any flexion of the elbow. There was another similar growth over the upper ends of the radius and ulna limiting pronation and supination. In the lower extremities the quadriceps extensor on each thigh was almost replaced by bone. There were diffuse osseous growths round the head of the right fibula and enlargement of both internal malleoli and also of the tuberosity of the right scaphoid. There were no growths on any other bones of the feet. The big toes on each foot presented the deformity met with typical in this disease—namely, slight hallux valgus with shortening and broadening of the phalanges which were fused together.

Remarks by Mr. VAUGHAN.—In considering the new formation of bone found in this patient two groups present themselves: (1) deposition along the course of a muscle, and (2) deposition over some existing prominence of bone. The majority of the new bone belongs to the first group and seems to be an ossification commencing at the attachment of muscle to bone and extending along the muscle in a manner analogous to the "rider's bone." In a great number of the recorded cases there is evidence of injury preceding a deposit of bone, making the analogy more striking, but in this case no injury has been assigned as a cause of any increase of the disease while, on the other hand, there was marked progression of the affection during the winter months with a remission during the summer.

The disease for the most part is chronic, but occasionally, as in the case of the right arm of this patient, there is an acute inflammatory process, accompanied by much pain. In the *United States Journal of Medicine*, De Witt has described minutely the sequence of pathological events, prominent amongst which is a phlebitis accompanied by an exudation into the connective tissue of the muscle rich in osteoblasts. Such a lesion would explain satisfactorily all the symptoms present during an acute process preceding the deposit of bone in the right arm of the patient now discussed, but this is the only instance in which any acute inflammation had occurred during his malady nor has there been pain of any character in any other part of him that could be attributed to his disease. Pain as a symptom of this disease is remarkable for its absence, whereas in rheumatism and osteo-arthritis it is most constant.

In the present instance there are no masses of bone lying

free in the muscle substance, but all are connected to bone. The joints are free from disease and what movement is left to the patient is unaccompanied by pain, creaking, or grating. In conclusion, I would draw attention to the fact of the disease occurring in the parent and being in him associated with a congenital deformity of the thumbs. I am indebted to Dr. Burton-Fanning for permission to record the case.

Reviews and Notices of Books.

Anæsthetics and their Administration. A Text-book for Medical and Dental Practitioners and Students. Illustrated. By FREDERIC W. HEWITT, M.A., M.D. Cantab., Anæsthetist to H.M. the King. London: Macmillan and Co. 1901. Pp. 552. Price 15*s.* net.

THE first edition of Dr. Hewitt's manual was issued in 1893: the present is, however, more than a second edition, as the author has recast his material and added much which is important, as well as including two sections dealing respectively with the history of the introduction and development of anæsthetics and the physiology of the subject. We welcome the last-mentioned addition, for no rational knowledge of anæsthetics can be acquired without a thorough grasp having been obtained of the very large amount of experimental work which has been prosecuted during the last half century. The views of Dastre are prominently advanced in these pages, but a meritorious effort has been made to present other schools of thought. Even in the 50 pages devoted to the subject it is not possible to give anything like a complete *résumé* of the researches bearing upon the physiological aspects, and it is difficult to avoid at times attaching what some physiologists may regard as undue weight to the opinions of certain workers and too little to those of an opposite school. The alteration which under many conditions takes place in the activity in conveying power of the blood corpuscles, influencing as it does the oxidation and vitality of the tissues of the body, is one which must be reckoned with when the physiology of anæsthesia is being discussed, and the omission of the investigations upon this point breaks the chain of reasoning, especially in connexion with the gases in blood from anæsthetised animals. Most of the analyses of the gases in blood which have up to the present been given must not be accepted as final since many precautions and errors of experiment require examination. The whole subject is worthy of fuller elaboration. We gather that Dr. Hewitt accepts the views of Professor Leonard Hill with regard to the much discussed question, "Does primary cardiac syncope occur under chloroform?" The arguments advanced by the Hyderabad Commission, and more recently in Surgeon-Lieutenant-Colonel Lawrie's book on Chloroform, do not appeal to Dr. Hewitt as sufficiently convincing, for he says (p. 91): "To sum up, then, on this much disputed point, it may be regarded as established that during chloroform anæsthesia this anæsthetic directly produces a depressing effect upon the heart itself; and that while it is true, not only in the physiological laboratory but in actual practice, that respiration generally ceases before cardiac action finally fails, it is the want of cardiac action which is the essential factor in the causation of death under chloroform."

In Part II. various matters connected with the selection of the anæsthetic are considered and this section, taken in conjunction with Chapters XIII. and XIV. dealing with anæsthetic mixtures and sequences, presents the writer's views upon the merits of the agents in common use. Nitrous oxide given with oxygen is recommended for brief cases, and nitrous oxide followed by ether for prolonged operations. The nitrous oxide and oxygen mixture is not advocated for long cases, although the author admits that this mixture may in some few instances be employed for periods exceeding two or three minutes. Such sequences as nitrous oxide and ether followed by chloroform, and chloroform or the A.C.E. mixture in sequence with ether, also find favour with Dr. Hewitt and thus far it appears that the author falls into line with the usual custom among English anæsthetists. Those who have used oxygen with ether in appropriate cases will not agree with the adverse criticism which Dr. Hewitt pronounces upon the method. As, however, the "best" plan is said on page 285 to be to introduce the oxygen through a small tube into a Rendle's inhaler the failure to obtain more satisfactory results may be due to the methods suggested. Dr. Hewitt is, perhaps, less in accord with the prevalent feeling in not reprobating the administration of morphine concurrently with chloroform, but he is probably quite correct in saying that provided morphine is only employed in carefully selected cases it should be retained in the armamentarium of the anæsthetist. The addition of atropine appears to us to be advisable even if, as Dr. Hewitt suggests, there is at present an increasing disbelief in the danger of cardiac failure through vagal inhibition. It must be admitted that many of the undoubted dangers of morphine given in association with chloroform are removed when atropine is added to the other alkaloid. In the chapter dealing with Mixtures, Schleich's method of employing a solution of chloroform, ether, and petroleum ether in different proportions is accorded a place. These solutions have been very extensively employed in Germany as well as in the United States and have been highly spoken of. Dr. Hewitt says that he is not aware of their having been employed in this country, but we believe that they have been tried with success at the London Hospital by Dr Probyn-Williams who regarded his trial as encouraging.

In describing apparatus and the methods of employing them Dr. Hewitt is peculiarly felicitous. He devotes most of his space in the sections dealing with the practical side of his subject to the methods and apparatus which he himself employs. Other methods are detailed although less fully. He is not in favour of Clover's larger gas and ether inhaler, although we believe that this apparatus is much used and is by many preferred to the smaller regulating inhaler even with the numberless modifications to which it has been subjected. Certainly the charge that the larger apparatus cannot be cleansed is inaccurate, as we have seen it constructed in such a way as will allow of every part being fully cleansed and disinfected. For chloroform administration Dr. Hewitt advocates the employment of a Skinner's mask and a drop bottle, using Junker's inhaler only in nasal and oral surgery. We find ourselves in accord with him when he insists upon the peril of accepting the use of Junker's or any inhaler as a "perfectly safe" method, but we venture to think that the plan which he suggests is open to a similar objection. Dr. Hewitt's favourite anæsthetic appears to be the A.C.E. mixture or a sequence containing it and his description of his method of employing it is admirable. Sections are given dealing with bromethyl, amylene (pental), and ethidene dichloride, but these agents do not appear to have appealed to Dr. Hewitt who, rightly we think, rather deprecates their use. Professor Wood's careful study of the effects of dichloride of ethidene upon the heart clearly shows that that anæsthetic is at least as dangerous a circulatory depressant as chloroform. Nitrogen, which comes in for a rather full notice, cannot, we think, ever be worth the attention of the practical anæsthetist on account of its comparative inertness. The same remark applies to carbonic dioxide, although Waller's careful work upon this gas deserves notice. In comparing the various anæsthetics Dr. Hewitt comes to the conclusion that ether is at least five times safer than chloroform judged from statistics—a less favourable result than Waller obtained in his research

upon isolated nerve. His ratio of safety was seven times in favour of ether. The common criticism that ether kills by its after-effects makes Dr. Hewitt's careful study of the whole question of dangers and after-effects particularly valuable. He has since the issue of his first edition altered his views with regard to so-called ether pneumonia. His experience has convinced him that certain patients do succumb to lung trouble apparently initiated by ether inhalation. He has not, we think, quite appreciated the undoubted fact that bronchitis and even broncho-pneumonia are by no means uncommon in hospital practice after chloroform, especially after prolonged operations. We regret that the limits of his space prevented Dr. Hewitt from giving an even longer discussion of this most important question. Again, renal dangers have been carefully studied and it is reassuring to find that Dr. Hewitt's experience is in favour of ether. The section dealing with the dangers and *contretemps* of anæsthesia is very valuable, but it might, we think, be made more so by some re-arrangement and division into paragraphs. Dr. Hewitt declares himself little in favour of drugs, and this probably accounts for his comparatively slight notice of the use of strychnine, a drug in which Professor Wood places the utmost confidence, and for the omission altogether of the recently advocated use of freshly prepared suprarenal capsule, which, according to Schäfer, is the most powerful remedy in cases of circulatory failure at present known. Among remedies "forced respiration," or pulmonary perflation, has in the hands of Professor Wood proved of the greatest value. We believe, indeed, the authority given goes so far as to say that death from respiratory failure will never occur when this plan is adopted. Although Fell's method is mentioned on p. 464 Dr. Hewitt has not emphasised the use of forced respiration as opposed to the routine plans of Sylvester and Howard. What Dr. Hewitt insists is that whatever restorative measures are adopted the anæsthetist should devote himself wholly and solely to restoring respiration and should not allow his attention to be diverted from that object. Undoubtedly "prevention is better than cure" in anæsthetic emergencies, and so the sections, which Dr. Hewitt has carefully written, dealing with preliminaries and contained in Chapters V. to VIII. inclusive, should be read with close attention. The author is right in insisting upon the extreme importance of posture and has done valuable service by systematising the subject. We find, however, that, although apparently accepting Professor Leonard Hill's view with regard to vaso-motor paralysis under chloroform and the incidental danger of the collection of blood in the "abdominal pool" so causing cerebral bloodlessness, Dr. Hewitt says (p. 476): "There seems to be very little evidence that the sitting position is of *itself* a danger in chloroformisation provided that the respiration be unembarrassed and the corneal reflex is not completely abolished." This is undoubtedly true if the corneal reflex is not completely abolished, for in that case the "stop-cock action" of the capillaries is still safeguarding the circulation, but we think that Dr. Hewitt's caution that the sitting posture should be avoided in chloroformisation is weakened by the concluding words of the paragraph which we have quoted. We say this in no carping spirit, but as the result of our experience that it is most important to be dogmatic on general principles, and we contend that only the most experienced of chloroformists can be relied upon to conduct a chloroformisation except under the most favourable conditions. Dr. Hewitt's book, as a whole, is a valuable one; good as was the first edition, the present one is better. It has been enriched by a larger experience, the experience of a man who has lost few opportunities of learning from his cases and studying his results, and we congratulate him upon his work.

Pernicious Anæmia, its Pathology, Septic Origin, Symptoms, Diagnosis, and Treatment. By WILLIAM HUNTER, M.D. Edin., F.R.C.P. Lond., F.R.S.E., Senior Assistant Physician to the London Fever Hospital; Joint Lecturer on Practical Medicine, Pathological Curator, and late Pathologist, Charing Cross Hospital. With Plates, Charts, and Illustrations. London: Charles Griffin and Co. 1901. Pp. 480. Price 24*s*.

DR. WILLIAM HUNTER, having made a prolonged study, extending over 15 years, of pernicious anæmia in all its aspects, may fully claim a right to be considered an authority on the subject, yet in this work we find a strange mixture of certainty and hesitation—certainty in the results of his extensive and painstaking investigation, but hesitation in exactly determining the etiology of the condition concerning which he is writing with exhaustive intent. The impression (it may be a false one) we received after reading the book was that Dr. Hunter would like to assign cario-necrotic conditions of the teeth as the sole cause of pernicious anæmia, but is afraid to do so on account of the obvious question, As dental necrosis is so common, if it be the cause of pernicious anæmia, how is it that the latter condition is so rare? In fact, Dr. Hunter himself remarks: "Dental cario-necrosis is far too common to be itself the cause of so rare a disease as pernicious anæmia." Yet further on he says: "Pernicious anæmia is a chronic infective disease. ..... The chief source of the infection is oral sepsis, arising in connexion with long-continued and neglected cario-necrotic conditions of teeth"; then he still further weakens his argument by adding, "Sometimes, possibly, arising from other causes—e.g., drain poisons." It is true he acknowledges it to be a "special infection of the digestive tract," but the contrast between such statements as the above is confusing, and we are forced to the opinion that Dr. Hunter would have acted more wisely by deferring coming to the above conclusions as to the etiology of the disease until he had examined more cases, for apparently 12 cases only were observed by himself. He also lays too much stress upon the statements of patients themselves as connecting the dental condition with the general condition. Dental cario-necrosis will, as is generally known, cause glossitis and general gastric and intestinal troubles, partly due perhaps to direct infection from the teeth and largely, no doubt, to the defective manner in which the food is masticated.

Dr. Hunter makes a strange statement when dealing with the bacteriology of dental caries. He says: "On this point—the infective nature of dental caries—I need not dwell." Now, we should have imagined that from his point of view—viz., that the infection arises from dental caries—nothing could be of more importance than a thorough investigation of the micro-organisms found in connexion with the teeth. He refers to the acknowledged fact that the pneumococcus is frequently found in the mouths of healthy people, yet under certain circumstances the organisms take on a malignant action and an attack of pneumonia is the result. If he means to suggest that a similar course of events occurs in connexion with pernicious anæmia we should consider this a very plausible theory. Dr. Hunter's observations on Dental Disease as a Cause of Septic Gastritis and his remarks on the Nature of the Infection of Pernicious Anæmia are rather vague and in marked contrast to the decided manner in which he discusses the pathology of the disease and the nature of hæmolysis. He designates the infection as "most probably of a 'mixed' character," and also states that "one element in the infection is streptococcal. ..... Such infection the more readily occurs if the stomach or intestine is already from any cause the seat of disease; the most potent antecedent cause is 'septic' gastritis arising in connexion with oral sepsis." Such statements as these, in which "oral sepsis"

is in one sentence stated to be the "chief source" of infection and in another as an "antecedent cause" producing a condition which enables the "chief source" to produce its pathogenic action, are confusing and make the etiology most involved. The bacteriological and pathological conditions must be further investigated to ascertain their relative dependency on each other before we can accept Dr. Hunter's theory as he now presents it; or as he himself expresses it: "It must remain for future observations to determine the nature of the organisms concerned and their relative rôle."

If we consider the author's investigations as to the etiology of pernicious anæmia as incomplete we can speak in the highest terms of approbation as to his investigations on hæmolysis, which are some of the most elaborate and instructive yet carried out; and his conclusions regarding the pathology of the disease are the result of prolonged and patient observation. With regard to the morbid anatomy of the disease he maintains that "none of the pathological conditions—e.g., malignant disease, atrophy of the stomach, gastro-intestinal lesions, &c.—occasionally found associated with the features of pernicious anæmia can be rightly regarded as the essential anatomical lesion underlying the anæmia present, or as reasonably accounting for the remarkable degree of its anæmia as compared with that of all other forms of anæmia." This conclusion is based mainly on two considerations—(1) that similar anatomical changes, often far more marked, are constantly to be met with in cases presenting none of the features of pernicious anæmia; and (2) that still more frequently cases of pernicious anæmia are met with without any such anatomical lesions. Dr. Hunter then proceeds to discuss the changes in the blood and blood organs, pointing out the interesting fact that the rich hæmoglobin colour of the spleen always contrasts markedly with the bloodless condition of all the other organs and tissues with the single exception of the bone marrow. He also shows that in pernicious anæmia the hæmolysis differs in important respects from that occurring in health, and cannot be regarded merely as an exaggeration of the normal process. The most important point in this connexion is that the hæmolysis is confined to the portal area, and inasmuch as gastro-intestinal influences are those which, even in health, specially determine the occurrence of hæmolysis Dr. Hunter considers that it is reasonable to conclude that the conditions that determine the hæmolysis in pernicious anæmia are also situated within that tract—moreover, "that they are of a special character." This last conclusion we have already commented on.

The symptoms of pernicious anæmia are described in an interesting manner and the treatment as based on Dr. Hunter's theory is duly considered, stress being naturally laid on the hygiene of the teeth and mouth, but he very rightly urges that such measures as may prevent or remedy oral sepsis should not replace, but should be supplemented by, the use of arsenic. The part of the volume devoted to the Physiology of Blood Destruction (Hæmolysis) is well worthy of careful study. His experiments in regard to this process have been carefully carried out and demonstrate that the spleen is the chief seat of hæmolysis, the liver being less important, its rôle being mainly that of an excretory organ. Second only in importance to the spleen, the gastro-intestinal capillary area is the chief seat of hæmolysis. Dr. Hunter's reasons for coming to these conclusions are clearly demonstrated. We have not been able to agree with the whole of Dr. Hunter's arguments and consider that portions of his investigations—especially in reference to the etiology of pernicious anæmia—are incomplete, but we do not wish to detract from the value which his work possesses. He has added greatly to what was previously known as to the nature of the disease; in fact, he has been one of the first to establish it as a separate disease, in no way connected with other forms of anæmia, and has shown it to be in all probability a toxæmic condition. We trust that he will carry his investigations further so as to be able to isolate definitely the organisms on which it is dependent.

Vorlesungen über die Pathologische Anatomie des Rückenmarks. (Lectures on the Pathological Anatomy of the Spinal Cord.) By Dr. HANS SCHMAUS, with the coöperation of Dr. SIEGFRIED SACKI. Wiesbaden: J. F. Bergmann. 1901. Illustrated. Pp. 600. Price 16*s.*

THIS large and exhaustive treatise, which deals exclusively with the pathological anatomy of the spinal cord, affords eloquent testimony to the industry and genius of modern neurologists. It is hardly a hyperbole of speech to say that three-quarters of the facts which go to make up the monumental contents of this book had not been discovered 20 years ago, and that for the most part their discovery has been rendered possible by the vast improvements in histological technique which we owe to Weigert, to Golgi, to Marchi, and to Nissl. The illustrations which adorn the pages of this work are among the finest examples of reproduction with which we are acquainted.

Although the story of the neuron is but a matter of recent history it has proved so complete and satisfactory a basis for the understanding of what were previously little better than pathological conundrums, that the doctrine of these independent cell systems has become practically an article of neurological faith. It will come, therefore, as a matter of surprise to many of us that Dr. Hans Schmaus should be at pains to explain his reasons for accepting this doctrine as the anatomical basis of his neuro-pathological arguments. Although Golgi himself has all along maintained his belief in the probable continuity of contiguous neuronic systems by means of an anastomotic network of fine fibrillæ, this belief has not been shared by the majority of workers in this field of pathology. The view almost universally held has been that the connexion between different neurons was one of contact only and that the nerve-cell exercised a controlling influence over the entire neuron with which it was associated. However, according to the recent researches of Apathy, there seems reason for believing that, at least in the case of certain of the lower animals, the axis-cylinders of nerves are composed of primitive fibrillæ floating in a more or less fluid medium, and that the final ramifications of these fibrillæ or telodendrites are woven into a variety of anastomotic network (*Netzwerk*, *Gitterwerk*, or *Elementar-gitter*) not only in the substance of the nerve-centres but in the ganglion cells themselves (neuropile).

Although up to the present we are in want of actual demonstration that the same histological arrangement holds good in the case of man, Nissl has commented on the considerable hiatus which exists in our knowledge concerning the elements of which the grey substance of the brain and spinal cord are composed, and has ventured on the speculation that the unknown elements may consist of the terminal filaments of primitive fibrillæ woven into an anastomotic neuropile of the same character as that described by Apathy in the case of lower animals. And, further, the controlling influence of the nerve-cell, except as regards its trophic functions, has been called in question by Bethe. By a very delicate manipulative process he has convinced himself that in the case of a crab (*Carcinus mænas*) reflex actions can occur without the intermediate influence of the nerve-cell, and to the neuropile he relegates this important function. After a very careful consideration of the evidence on which the above hypotheses are based Dr. Schmaus has elected, with all reservation, to abide by the orthodox conception of the independence of separate neurons and the central administration of the nerve-cell. Pathologists will, however, read with the greatest

interest the able summary which the author supplies in Lecture II. of the views which threaten to assail the anatomical foundations of modern neuropathy. The significance of the "Nissl bodies" in the life-processes of the nerve-cell are dealt with at considerable length. The process of chromatolysis, whereby the stainable matter disappears, is not regarded as being associated with any specific influence in the determination of disease; it may occur as the result of totally distinct exciting causes, and in various degrees in a great variety of pathological and physiological conditions: it is to be regarded not as a degenerative process *per se*, but as a reaction condition (*Reaktionszustand*) of the nerve-cell. In accordance with the suggestion by Lenhossek the names "tigroid" and "tigrolysis" are respectively adopted throughout this work for the colouring matter of which the "Nissl bodies" are composed and for the process whereby it disappears. These modifications in the nomenclature will obviate many of the ambiguities and misunderstandings which were involved in the use of the terms "chromatin" and "chromatolysis." The consideration of tabes dorsalis occupies three lectures and nearly 100 pages. As a type of a nervous system degeneration which offers the widest scope for discussion the space which is devoted to this subject cannot be grudged. The condition which gives rise to this variety of degeneration is regarded as an elective toxæmia which acts directly upon the intra-medullary fibres in conjunction with other coöperating etiological factors, such as nerve-strain, cold, traumatism, &c. With regard to the possibility of an initial lesion of the ganglion cells of the posterior roots being able to give rise to organic changes in the terminal nerve filaments in the posterior columns, when no demonstrable organic change is present in the ganglion cells themselves, Dr. Schmaus suggests that the conception of a functional disturbance of the nerve-cell leading to degeneration of its most distant process-endings is not altogether incompatible with what we know of cell pathology. The application of Edinger's "adequate nutrition" theory (*Ersatztheorie*) to the pathogenesis of tabes, as well as to that of certain trade palsies, is suggestive and to the point.

The distinctions between atrophy and degeneration on the one hand, and between degenerations and inflammatory processes on the other, which have recently been exposed to the destructive criticisms of most enlightened pathologists, have once again to run the gauntlet of a very severe analytical examination on the part of Dr. Schmaus. We gather that he is inclined to the view that such distinctions as have been attributed to these processes must properly be regarded as distinctions in degree and not in kind. In conclusion, we can only hope that much of the extremely valuable information contained in this volume will, through the medium of our lecturers on pathology, filter through to the rank and file of the profession in this country.

The Twelfth Annual Report of the Asylums Committee of the London County Council for the year ending March 31st, 1901. With Graphic Charts and Statistical Tables. London: P. S. King and Son. Folio, pp. 188. Price 2*s*.

IN this valuable document, issued by the London County Council, with its wealth of facts and figures concerning London's pauper lunacy, we are informed that the total number of pauper lunatics in the county of London on Jan. 1st, 1901, was 21,369, showing an apparent reduction of 24 on the corresponding number for Jan. 1st, 1900. This apparent diminution is partly due to the recent incorporation of the hamlet of Penge in the county of Kent, thus relieving the county of London of 50 pauper lunatics, and partly to the removal of 124 patients in the London county asylums originally classed as paupers to the class of "private" patients. Allowing for these circumstances the original figures represent an increase of 150 lunatics during the year. Besides, "certified lunatics" the above returns include all lunatics in workhouses and "with relatives or friends." Limiting consideration, however, to pauper lunatics under reception orders (this being the class for which accommodation has to be found in the London county asylums), the total number on Jan. 1st, 1901, was 15,274, being an increase for the year of 213. "During the 11 years the Asylums Committee has had the control of the asylums there has been an increase of 5174 certified pauper lunatics. ..... As the 1901 census figures for London have just been published it is possible to give the ratio of lunatics to the population [in 1901] as compared with 1891, and this shows that there is an increase in the ratio of pauper lunatics to the population." Thus the ratio of "certified" pauper lunatics in January, 1891, was 2·467 per 1000 of population of the county of London (excluding the City), and in January, 1901, it amounted to 3·389 per 1000. The ratio of all pauper lunatics, whether certified or in workhouses or in the care of relatives, in January, 1891, was 3·940 per 1000 of population, and in January, 1901, it amounted to 4·739 per 1000. These facts comparing the increase of lunacy with that of the population are graphically shown in a coloured chart. The normal capacity of the existing asylums has been of late utilised to the utmost and there yet remain 1283 patients in excess of the accommodation at the date of the report. To meet this and future increases an asylum at Horton for 2000 patients is in course of construction and an epileptic colony for 300 male patients will shortly be commenced. Meanwhile temporary buildings put up five years ago at Colney Hatch and Banstead for the accommodation of 600 patients (300 females and 300 males) have been occupied under the sanction of the Home Secretary, and a further extension of time for another five years has been applied for and allowed. The building of the new asylum at Horton Manor is progressing satisfactorily, and 110 male patients are now located there in a temporary annexe to the main building. The Council recently approved of the provision of a working colony for 300 insane male epileptics on the Horton Estate and sanctioned a sum of £89,000 for carrying out the plans, and after consultation with the Commissioners in Lunacy it was finally decided that villas on the single floor plan should be built. Suitable plans were prepared, and they received the sanction of the Commissioners in Lunacy in November, 1900, and the sealed approval of the Home Secretary in April, 1901.

The recovery- and death-rates of the patients in the county asylums are given in Table I. of the Report. From this it appears that during the year 218 patients were discharged as "recovered" from Hanwell Asylum, 242 from Colney Hatch, 238 from Banstead, 150 from Cane Hill, 213 from Claybury, 175 from Bexley Heath, and 45 from Horton Manor Asylum. The total number of recoveries thus amounted to 1281, or 9·02 per cent. of the average number of patients resident in the London county asylums. The deaths during the year amounted to 232 at Hanwell, 212 at Colney Hatch, 247 at Banstead, 190 at Cane Hill, 233 at Claybury, 165 at Bexley Heath, and 43 at Horton Manor. The total deaths thus amounted to 1322, or 9·31 per cent., calculated on the same basis. It will be seen from a consideration of Table III A. that the recovery-rates varied considerably for different asylums. Thus, at Horton Manor it was 6·56 of the average number resident, at Cane Hill it was 6·77, at Claybury 8·53, at Hanwell 8·66, at Colney Hatch 9·52, at Banstead 9·74, and at Bexley Heath 13·53. Leaving out the first and last institutions, which are both of recent origin and in which the recovery-rates show the lowest and the highest figures respectively, the five older (and larger) asylums show a variation in the recovery-rate from 6·77 (Cane Hill) to 9·74 (Banstead), which is difficult to apprehend except on the supposition that the term "recovery" has, as regards

insanity, no hard-and-fast demarcation, and is differently construed by different authorities. The death-rates, however, show a remarkable uniformity throughout the asylums, being 8·3 per cent. at Colney Hatch, 8·5 at Cane Hill, 9·2 at Hanwell, 9·3 at Claybury, and 10·1 at Banstead, the mean death-rate being 9·3 for all the asylums.

The weekly cost of the maintenance per head during the financial year 1899-1900 was 10*s.* 1½*d.*, but as this was insufficiently met by the weekly charge to the unions and parishes of 9*s.* 11*d.* per patient, it became necessary to revise the latter, and in view of the increased prices of coals, provisions, and stores the charge has been raised to 10*s.* 9½*d.* per week as from July 1st, 1901.

An interesting and concise report of the work done at the pathological laboratory at Claybury is appended by Dr. F. W. Mott, the director. The work includes investigations in neuro-pathology and the pathology of insanity. A small department with apparatus for psycho-physical measurements has been placed under the charge of Mr. W. G. Smith, M.A., Ph.D. of Leipsic. A second volume of the "Archives of Neurology" will shortly be published which will contain the record of the work done in these departments. The Report on the whole is a weighty document, showing how large and important is the question of lunacy for London and the nature of the social and financial burden which it entails on the community.

Gynæcology: a Manual for Students and Practitioners. By MONTGOMERY A. CROCKETT, M.D. Series edited by BERN B. GALLAUDET, M.D. Illustrated with 107 Engravings. London: Henry Kimpton. 1901. Pp. 368. Medium 8vo. Price 7*s.* 6*d.* net.

IN this book Dr. Crockett has endeavoured to reflect the accepted views of the foremost authors and practical gynæcologists as expressed in the rich standard literature of the subject. He has succeeded in producing a book which undoubtedly does give a fair view of the present conditions of gynæcology. The space devoted to the various subjects is well proportioned and there is no unnecessary detail. The tendency to over-estimate the importance of minor gynæcology and local applications is not yielded to by the author who rightly points out that "there are a few cases of uncomplicated metritis which may be benefited by local applications, but they are so few that womankind as a whole would be the gainer were topical application within the uterus utterly abolished except in connexion with the operation of dilatation and curettage." A good and practical account is given of the uses and mode of application of the vaginal tampon—a useful means of treatment with which students are often somewhat unfamiliar. Dr. Crockett holds that the routine method of disinfecting the vagina must be severely criticised if it be judged by the results of Whitridge Williams's work upon the bacteria of the genital tract. Part of his argument—viz., that after labour healing takes place more favourably if internal disinfection be omitted—hardly holds good. It must be remembered that the passage of the child's head tends to obliterate all the vaginal folds and the escape of liquor amnii washes out very effectually the whole of the lower genital tract. There is nothing at all analogous to this natural cleansing in the case of a patient who is to have an operation performed upon the uterus or vagina. We are glad to see that in discussing the treatment of chronic metritis and chronic pelvic peritonitis the author lays stress upon the importance of treating the general health of the patient. The value to the patient of conservative measures in operations upon the ovaries is very great, and we are fully in agreement with Dr. Crockett when he says, "There is developing such an array of clinical facts in favour of conservative gynæcology that the surgeon who as a routine practice removes tubes and ovaries is now put upon the defensive and must show cause why he is not open to severe criticism." On the whole, a book we may safely recommend for the use of students.

LIBRARY TABLE.

Brief Notes on the Outbreak of Plague in the Jammu Province, Kashmir State, during 1901. By B. R. SAWHNEY, M.B., B.S. Durh. Jammu, 1901. Pp. 21.—In this pamphlet Dr. Sawhney, Chief Medical Officer, Jammu Province, gives a detailed account of the spread of plague in 16 villages having an aggregate population of 7620, among whom there were 489 cases of the disease with 329 deaths between Feb. 27th and June 11th, 1901. In the largest of these places, a town called Samba, with 2618 inhabitants, popular feeling was so much opposed to the measures adopted for limiting the spread of the epidemic that all official interference had to be suspended. In one of his statistical tables Dr. Sawhney shows that the proportion of persons attacked and also the duration of the epidemic were much greater in the villages in which the people had to be left to themselves than in those where preventive measures were adopted officially.

Shanklin Spa: Its History and Guide to the Town and Neighbourhood. By "MONOPOLE." Shanklin: Silsbury Brothers. 1901. Pp. 150. Price 6*d.*—This little book describes the Shanklin Spa at which comparatively recently an installation of warm ferruginous baths has been established on the same principle of the iron baths at Spa and Schwalbach. It is profusely illustrated and the illustrations are pleasing and artistic. "Monopole" is enthusiastic in favour of Shanklin as a health resort and he certainly has strong argument in favour of his case. It is stated in the preface that some change will be made in the next edition when the report of the Special Commissioner of THE LANCET[1] on the chalybeate water will be inserted. Intending visitors to Shanklin and to the charming scenery of its environment will find this little book of interest, and we should not be surprised if "Monopole's" example were followed by writers resident in other health-resorts.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. With Lithographic Plates and Engravings on wood. London: J. & A. Churchill. 1901. New series, Vol. XLIV., Part 4 (price 10*s.*), and Vol. XLV., Part 1 (September, pp. 88, price 10*s.*).—The articles contained in Part 4 of Vol. XLIV. are as follows: 1. On Two New Species of Onychophora from the Siamese Malay States, by Richard Evans, M.A., B.Sc., of Jesus College, Oxford. Mr. Evans was fortunate enough to obtain 13 specimens of Peripatus, two of which—both females—he has named Eoperipatus Weldoni and 11 of which—six males and five females—are named Eoperipatus Horstii. The first specimen, he says, was brought to him by a Malay who carried it between the prongs of a split stick. On handling the animal it suddenly squirted upon Mr. Evans a whitish sticky slime to a distance of fully 18 inches. His hands were covered with it, and though it did not stick to the body of the animal itself he only succeeded in getting it off with much difficulty. This slime, though fluid when first exuded, solidifies almost immediately and whilst semi-solid can be drawn out into threads like the juice of the rubber tree. A very detailed description is given of both species and six plates with many figures accompany and illustrate the article. 2. A second article by Mr. R. Evans, supplementary to the foregoing, gives a description of a single female of a new

[1] THE LANCET, Oct. 6th, 1900, p. 1059.

species sent to this country by Mr. A. M. Butler, curator of the museum at Selangor, Straits Settlement, which Mr. Evans has named Eoperipatus Butleri. The details of the structure of this species are given in a plate. 3. On Two New British Nemerteans, by R. C. Punnett, B.A., with two plates. These animals were found by Mr. Punnett whilst digging in the mud of the river Yealm at low-water mark. He has named one of the species Micrella rufa, which belongs to the family of the Lineidæ, and the other Oxypolia beaumontiana, which belongs to the family of the Eupoliidæ. Two plates illustrate the dissection of these animals. 4. The Coelomic Fluid in Acanthodrilids, by W. Blaxland Benham, D.Sc., with a plate. Dr. Benham finds that in addition to amœbocytes there are "eleocyte" cells or cells containing refringent oily globules. There are also some curious thread-containing cells or linocytes, and, lastly, large rounded cells with a distinct pedicle without pseudopodia. The cytoplasm is occupied in these cells, which he names lamprocytes, by numerous vacuoles, each of which usually contains a small, highly refringent granule. The lamprocytes are the most abundant of the four forms of corpuscle. 5. The Crystalline Style of Lamellibranchia, by S. B. Mitra of Calcutta.—The style is pronounced by Mr. Mitra to be in reality a secretion, a digestive ferment whose function it is to digest starch—i.e., to convert starch into a reducible sugar. The structure of the style is given in a plate. This part of the *Quarterly Journal of Microscopical Science* contains the table of contents and the index of the forty-fourth volume of the new series.—Part 1 of Vol. XLV. contains two memoirs. The first is by J. Graham Kerr on the Development of Lepidosiren Paradoxa, with a note upon the corresponding stages in the Development of Protopterus Annectens, illustrated by four plates. The author shows that the earlier stages of the development of the protopterus closely resembles that of lepidosiren. He remarks that the contradictory statements to be found in the accounts of the development of these and other animals given by distinguished observers are due in part to insufficiency of material and in part to differences in the methods of preparing specimens for section and in their subsequent treatment. The second memoir is by Richard Evans, M.A., B.Sc., of Jesus College, Oxford, on the Malayan Species of Onychophora, dealing especially with the Development of Eoperipatus Weldoni. The article is illustrated with five plates.

The *Practitioner* for September continues the discussion of Fractures. Mr. John Poland contributes a comprehensive article on Separation of the Epiphyses which is very well illustrated, including some good reproductions of skiagrams. Fractures of the Spine and their Treatment are dealt with by Mr. C. A. Morton, who takes on the whole a view very unfavourable to operation in the remedying of these injuries. His opinion is that in the vast majority of the cases the chief damage is that done to the cord at the time of injury, which is unaffected by subsequent operation. In this connexion the little value of skiagrams, as showing nothing of the injury of the cord, is remarked upon. The rare cases in which there is fracture of the arch alone are by far the most hopeful ones for operative treatment. Dr. C. H. Bond writes on Fractures in the Insane, showing their frequency to be due to nutritional bone-changes giving to the bones a much diminished breaking strain. The review of Infectious Diseases contains an account of researches as to the etiology of small-pox that will be read with interest at the present moment. Definite peculiar corpuscular elements have been observed in variolous pus, but the interpretation of their significance is at present different at the hands of different observers.

Progressive Medicine. Vol. II. June, 1901. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D. London: Henry Kimpton. 1901. Pp. 470.—The list of contributions to the June number of this quarterly is a short one, and therefore may not inappropriately be mentioned at length. The first is by Dr. W. B. Coley, and deals with the Surgery of the Abdomen. The second is on Gynæcology and is from the pen of Dr. T. G. Clarke. The third and fourth are contributed by Dr. A. Stengel and Dr. E. Jackson respectively, and supply the latest information with regard to the Diseases of the Blood and the Surgery of the Eye. In addition to a general review of the most important developments in abdominal surgery, Dr. Coley has selected as a subject for special discussion the Surgical Treatment of Malignant Disease of the Stomach and Bowels. This affords him an excellent opening for dealing generally with recent advances in the methods of intestinal suturing, and particularly with the "Connell method" of end-to-end anastomosis and the Lee holder, a most convenient instrument for maintaining the intestine in position during the operation. In this section also a full account is supplied of the indications for surgical interference in cases of suspected perforation during the course of typhoid fever. Dr. Osler's recent and important paper on this subject[1] is carefully abstracted and his schedule of instructions for house physicians with regard to the diagnosis of this complication is given at length. To prove how useful such a schedule may be in the hands of intelligent medical officers it may be mentioned that at Dr. Osler's own hospital 11 cases of perforation had been surgically treated up to January, 1901, with five recoveries. The chances of successful surgical treatment of course largely depend on the celerity with which the diagnosis of perforation is made by the attending physician. Dr. Clarke prefaces his article on Gynæcology with an account of Leopold's blastomycetic theory of cancer; a little further the subject of enteroptosis is considered chiefly from the pathogenetic point of view of weak abdominal walls and relaxed pelvic floor. The author also describes at length Kelly's modified operation for the removal of the uterus, uterine tumours, and appendages by his "bisection" method. The value of pain in the diagnosis of diseases belonging to this department is also fully discussed. Dr. Stengel's contribution, which is the only one which deals with medical subjects, occupies about 80 pages and is all too short. The examination of the blood as a help to diagnosis, together with an account of several improvements in method and technique, occupy the first 15 pages of this section. For the rest, anæmia, hæmophilia, scurvy, diabetes, and gout represent the chief diseases which deserve to be included among those which may be said to have "progressed." In the article on Ophthalmology, although it is an excellent summary of recent improvements in eye surgery, there is nothing to arrest the reader's attention with the exception of an account of the retraction movements of the eyeball in certain congenital conditions of mal-development of the extrinsic musculature of the eyeball.

New Inventions.

THE TWIN ICE-BAG.

THE twin ice-bag represented in the accompanying illustration is intended for the application of ice to the thorax or abdomen of restless patients and has been made according to my instructions by Messrs. Arnold and Sons of West Smithfield, London, E.C. It is made entirely of plain rubber, straps included, and is thereby not injuriously acted upon by the secretions from the body. Having given it a good practical trial I have found it to give complete satisfaction

[1] THE LANCET, Feb. 9th, 1901, p. 386.

and I can confidently recommend it to the profession. The advantages I claim for it are as follows:—1. In its application to the thorax, back or front; restlessness of the patient does not interfere with its perfect action. The ice or ice water, owing to the two separate compartments, cannot gravitate from the side on which it is required to act. It can be emptied or filled with very little disturbance to the patient if the nightdress is put on so that its opening corresponds to the seat of the ice-bag—namely, on either the anterior or posterior surface of the body. On loosening the shoulder straps (not interfering with the waistband) whilst the patient lies on his side and allowing the upper portion of the bag to hang down, removing the stopper, and slightly pressing on the bag, the contents can be emptied into a dish and the bag refilled with a minimum of disturbance to the patient. If the patient is not too ill to sit up in bed it will be easier still to empty and fill the bag. The openings in the bag are so placed that they are very unlikely to press on the patient, but if they happen to do so they are within such easy reach of the patient that he can place them just where he likes. The application of ice in pneumonia I believe to be the most satisfactory treatment, especially from its effect in controlling the temperature. 2. In its application to the abdomen, as will be seen, the shoulder straps can be made use of round the thighs, and the ice-bag in this situation has all the advantages claimed for it in its application to the thorax. On the abdomen it is not only useful in cases of inflammatory troubles situated in this cavity, but also as a general temperature reducer I have found it to act very beneficially. I see no reason why this bag should not be applied to the head as well in cases of refractory patients, using the arm straps under the armpits and the waistband under the chin.

MARTIN J. CHEVERS, L.R.C.S., L.R.C.P.I.
Huddersfield.

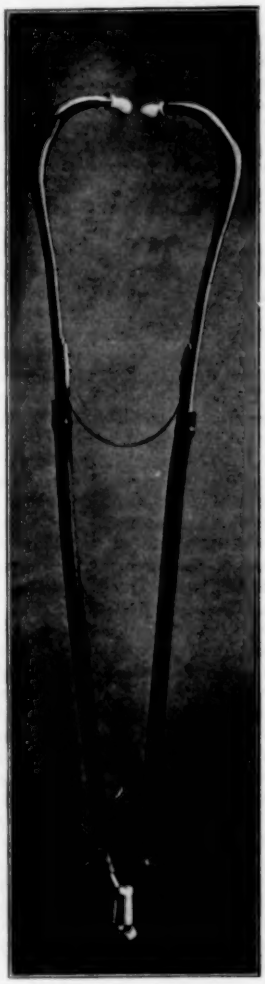
NEW FORM OF OINTMENT CARRIER FOR THE RECTUM.

THE various forms of ointment carriers (rectal and otherwise) are, I consider, made on a wrong principle, being fed from below. When such instruments have been used and then left for some time till required again, it will be found a difficult matter to get them to work, the ointment left after previous use having become hard and dry. The form depicted in the illustration and made for me by Messrs. Arnold and Sons of West Smithfield, London, E.C., gets over the difficulty completely. The point is to be dipped into the ointment receptacle and then rotated while the piston is being withdrawn, when the cage at the top will be filled, and if the instrument is then introduced into the bowel and the piston pushed home all the ointment will be extruded and none left to block the tube when required for use again. The openings at the point are much larger than usual, which is another advantage, for in the older form the small perforations became completely plugged after one using. The simplicity and saving of time by the use of the form of ointment carrier now described should ensure its universal adoption.

ALEXANDER DUKE, F.R.C.P. Irel.
Cheltenham.

A BI-RESONATING STETHOSCOPE.

I HAVE devised this instrument with a view of intensifying and rendering more distinct the sounds which the auscultator is accustomed to listen for when examining a patient. As seen from the illustration, the stethoscope is a simple one no complex mechanism being brought into its formation, thus avoiding any danger of the production of accessory sounds, which might be produced by the friction of a complex mechanism. The difference between my instrument and those that are already used for the same purpose is that in others there is only one resonating chamber and that is placed against the chest wall, or in very close proximity. In my instrument it will be observed that there are two resonating chambers, and that they are placed in close apposition to the ear-pieces. The advantage of the above arrangement is that the various sounds are conveyed up the almost straight tubes and enter the resonating chambers; there they are intensified and the impressions are conveyed direct to the ears and have not to travel through any tubing after being so rendered more distinct. Another great advantage in this instrument is that by the position of the resonating chambers the sounds have the impression to the auscultator of being very much nearer, thus some of the minutest sounds are comparatively easily heard and detected and no buzzing noise interferes while using the instrument. The instrument is light in weight and compact, being similar to that of the ordinary stethoscope. The spring is fixed on to the tubes by means of an additional plate, thus the lumen of the tubes is in no way interfered with.



Any chest-piece can be used with this instrument, but the one I find best is of simple construction and is dome-shaped, as seen in the illustration. The instrument has been made for me by Mr. A. Schollar, instrument maker, 64, Praed-street, London, W., and the complete cost is 12s. 6d.

J. COUBRO POTTER, M.D. Edin.
Sutherland-avenue, W.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) MAMESIN; AND (2) MA.ME.CO.
(THE MYOSIN ALBUMIN MEAT EXTRACT COMPANY, 107, STRAND, LONDON, W.C.)

LIEBIG long ago admitted that meat extracts possessed but feeble if any real nutrient property at all, and it is regrettable that Liebig's conclusions, which were correct in every detail, are not more seriously regarded than they are. The bulk of meat extracts at the present day only represent the actual nutritive value of meat to a very limited degree. The real essence and nourishing portion of meat is the albumin of the muscle which is readily digested, readily absorbed, and readily appropriated. Yet most commercial methods reject, if not altogether, certainly the greater part of, this powerful nutrient material. We therefore recognise in the preparations before us an important advance, for they both contain myosin albumin in a proportion exactly adapted for nutritive requirements. The albumin is extracted by an ingenious and physiologically sound process which at the same time is simple enough in detail to admit of the product being sold at a moderate cost. Ma.Me.Co., to describe it as simply as possible, is wet myosin albumin. Its proximate composition is as follows: water, 86·04 per cent.; mineral matter, 0·66 per cent.; and meat derivatives, 13·30 per cent. The albumins amounted to 12·46 per cent., equal to 1·99 per cent. of nitrogen, and the meat basis amounted to 0·30 per cent., equal to 0·01 per cent. of nitrogen, while fat was present to the extent of 0·54 per cent. The total nitrogen was thus 2·00 per cent. Mamesin differs from Ma.Me.Co. only in containing besides myosin albumin the extractives and gelatines of beef. Its proximate analysis was as follows: water, 81·24 per cent.; mineral matter, 3·21 per cent.; and meat derivatives, 15·55 per cent. The total amount of albumin was 11·73 per cent., equal to 1·87 per cent. of nitrogen, while the meat bases amounted to 3·27 per cent., equal to 0·79 per cent. of nitrogen, and the fat to 0·55 per cent. The total nitrogen was 2·66 per cent., of which nearly three-fourths are contained in myosin albumin. The preparations readily peptonise, giving quite clear solutions of peptone. An important feature is the entire absence of fibroid matter or similar insoluble nitrogenous stuffs of meat which are difficult of digestion. Thus while both Mamesin and Ma.Me.Co. are practically equal from a nutritive point of view, weight for weight, to meat, they obviate any difficulty of digestion arising from the presence of meat fibre. Mamesin is tasteless, while the taste of Ma.Me.Co. is of a pleasant beefy character. Both preparations are contained in tins and we could not find the slightest evidence of any action upon the metal having taken place; it was bright and without any signs of corrosion. We also searched for chemical preservatives but without any evidence of their presence. The preparations are a very obvious advance on many so-called meat extracts; they present the actual albumin of meat, which is easily absorbed, sustaining, and powerfully nourishing.

AROMATIC IRON MILK (DOLLE BREMEN).
(A. STRAUSS COLLIN, BUSH LANE HOUSE, CANNON-STREET, LONDON, E.C.)

This is a somewhat remarkable preparation. In appearance it is exactly like milk, but on analysis we found it to consist of a liquid containing pyrophosphate of iron in suspension, associated with spirit, glycerine, and sugar, and certain aromatics. "Iron milk" certainly does not present the appearance of a preparation containing iron, being quite white, while it possesses no taste except that of aromatics and has no astringent effects. We found the preparation to contain 1·12 per cent. of ferric oxide, which is equivalent to 2·9 per cent. of anhydrous ferric pyrophosphate. Of course, the preparation does not affect the teeth because the iron is in an insoluble form until it reaches the gastric organs. It is an excellent means of administering iron, pleasant to take, and free from medicinal taste. Having regard to the fact that the iron is associated with phosphorus the preparation is calculated to exert marked tonic effect. We could find no objectionable preservatives in it. In German clinics "iron milk" is spoken of as a very satisfactory means of exhibiting iron and as free from the objectionable disturbing effects often set up by ferruginous preparations.

SINARO NATURAL TABLE WATER.
(LONDON OFFICES, 29, ELY-PLACE, HOLBORN, E.C.)

On analysis Sinaro shows only a moderately saline composition. The chief saline ingredients are common salt, carbonate of calcium, and carbonate of soda. The amount of salt given in an analysis by Professor Fresenius is considerably below the amount which we found, so that we infer that a small quantity of salt has been added to the natural water to make it more palatable. The total saline ingredients amounted to 2·138 grammes per litre and were comprised as follows: carbonate of soda, 0·55 gramme per litre; carbonate of calcium, 0·74 gramme per litre; and common salt, 0·848 gramme per litre. The water is very agreeable to the taste, bright in appearance, and though pleasantly sparkling contains not a great excess of carbonic acid gas. We could find no evidence of organic impurity. It possesses antacid properties and is a table water of a good description.

CROWN MALT EXTRACT.
(THE UNITED BREWERIES COMPANY, LIMITED, COPENHAGEN. LONDON OFFICES, 46, QUEEN VICTORIA-STREET, E.C.)

Malt extract contains chiefly malt sugars and dextrine and potassium salts (mainly the phosphate), while nitrogen-containing substances are not present to any important extent. On analysis the Crown malt extract gave the following results: extractives, 10·51 per cent.; mineral matter, chiefly phosphate of potassium, 0·23 per cent.; absolute alcohol, by weight 5·81 per cent., by volume 7·25 per cent., equal to proof spirit 12·70 per cent. It will thus be seen that the extract presents much the composition of stout, though with its nourishing qualities enhanced and its acid contents reduced to a minimum. The extract effervesces slightly and possesses a strong malty flavour. It, however, shows no digestive action upon starch, so that what diastase may have been in it has been rendered inactive, probably by boiling. It presents the nourishing qualities of malt in a concentrated form.

(1) TABLOID SODIUM CACODYLATE; (2) TABLOID HYPODERMIC SODIUM CACODYLATE; AND (3) TABLOID MORPHINE AND EMETINE.
(BURROUGHS, WELLCOME, AND CO., SNOWHILL-BUILDINGS, LONDON, E.C.)

The salts of cacodylic acid are interesting in that they enable a comparatively large quantity of arsenic to be administered in diseases in which arsenic is of known value. The accuracy of dosage is, of course, of great importance and this is secured by the use of tabloids both for administration by the mouth and for hypodermic use. Both tabloids contain a quarter-grain of the pure sodium salt. The tabloid morphine and emetine contains $\frac{1}{15}$th of a grain of morphine sulphate and $\frac{1}{30}$th of a grain of emetine—a formula which is designed to be of service as a sedative and expectorant in alleviating irritable cough. The tabloid is to be dissolved gradually in the mouth, where it exerts also demulcent properties.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 28, 1901.

The Local Government Board and Vaccination.

ON Sept. 17th the Local Government Board, in order to strengthen the hands of vaccination officers in the discharge of their duties, addressed to boards of guardians throughout the country a circular containing the opinion of the law officers of the Crown on certain questions which have arisen in course of the enforcement of the Vaccination Acts. This circular deals with some of the defences that have been raised by legal gentlemen defending parents charged with neglecting to have their children vaccinated. These defences have often shown considerable ingenuity and have frequently been successful before paid magistrates as well as before country benches, mainly, no doubt, because the vaccination officer is pitted against a professional advocate, while his own practical knowledge of the law of evidence and of the interpretation of statutes is limited to those cases in which he has been engaged under the Vaccination Acts. The defences to which the Local Government Board calls attention relate to the service, to the proof of the service, and to the contents of two notices which have hitherto played an important part in vaccination proceedings. The first of these notices is the notice which is to be given by a public vaccinator of his intention to visit a child's home in order to offer to vaccinate it, if it has not been vaccinated within four months of its birth. The notice is given under Section 1 (3) of the Vaccination Act of 1898. The second is the notice to procure a child's vaccination referred to in Section 31 of the Act of 1867, which must be given as a preliminary to any proceedings under that enactment. With regard to both these notices it has been urged that they must be served personally on the parent or other person having the custody of the child. The Local Government Board, on the advice of the law officers of the Crown, informs vaccination officers that personal service is unnecessary, and that both these notices may be sent by post in ordinary unregistered letters.

The circular then calls attention to the proper procedure to be followed in issuing summonses under Section 31 of the Act of 1867, intimating that the points to be stated in the information when the summons is applied for are—(1) that the child has not been vaccinated; (2) that the parents have had notice under Section 31; and (3) that the notice has been disregarded. Then it is pointed out that upon the hearing of the summons the only question to be determined is whether the child has or has not been vaccinated, or has already had the small-pox. To the determination of this question it is entirely irrelevant whether the parent had notice that the public vaccinator would come to his house, nor does it matter whether the public vaccinator ever went there and offered to vaccinate the child or not. No evidence, therefore, need be given as to this. Nor is proof of the sending of the second notice (that is, the notice under Section 31 of the Act of 1867, to procure the vaccination of the child) a necessary part of the case for the prosecution. But as it may become so, owing to evidence being given for the defence that no notice was received, or as magistrates may refuse to adopt the view of the law officers of the Crown upon this point, the further opinion is given:—(1) that the service of the notice will be *primâ facie* established by showing that it was sent to the defendant properly addressed, prepaid, and posted; and (2) that the contents of the notice may be proved by verbal evidence without production of original or duplicate documents. At the same time, however, excellent advice is given to vaccination officers as to the best method of keeping accurate record of all notices given, with a view to proving their contents, and with this advice the circular ends. That it was desirable that some such attempt should be made to elucidate the procedure in vaccination cases there can be no doubt. Without multiplying instances we may mention the following. In last November Mr. FORDHAM, sitting at the North London Police-court, allowed two points to be successfully taken by the defendant's advocate, only adjourning the case on the vaccination officer paying £5 5*s.* as costs, and this in order that notice might be given to the defendant to produce the notice given to him of the intention of the public vaccinator to call and offer vaccination. This notice is now declared by the law officers of the Crown to be wholly irrelevant. On the other hand, sitting in South-west London within a short time of this, Mr. R. O. B. LANE, another metropolitan magistrate, took the opposite and, as it now appears, correct view, and held that proof of the service of the public vaccinator's notice was not a condition precedent to prosecution and conviction. If London magistrates who are barristers of experience thus differ among themselves it can hardly be expected that the lay bench will do better; but in future, on these points at any rate, magistrates will only go wrong if they care to decide in the teeth of the opinion of the Attorney-General and Solicitor-General and to risk attention being called to their errors by appeal to the High Court.

The Local Government Board has also addressed a letter to the London School Board in order to obtain if possible the coöperation of the London School Board in dealing with the outbreak of small-pox in the metropolis. The Local Government Board asked the London School Board to accord the same facilities for the examination of children in the schools under its control as have been afforded by the managers of voluntary schools with a view to the protection of the children, and so of the public, by vaccination. In seeking the coöperation of the London School Board in the present emergency the Local Government Board has not been charged with the carrying out of powers to compel. It has rather had to endeavour by persuasion and diplomacy to convince a body—and a body fully alive to its own importance and the strength of its own position—of the urgency of maintaining the public health by all possible precautions. In this it has not been altogether

successful owing, no doubt, to the views held by admitted anti-vaccinationists on the School Board and to the fear of arousing unpopularity among their constituents on the part of others. In response to the representations addressed to it by the Local Government Board the School Board passed on Sept. 23rd, after a lengthy discussion and the moving of many amendments, a motion which in its final form was as follows:—

"That facilities be given to the public vaccination officers of the metropolis, on the application of the proper local authority, to enter the schools of the Board in infected areas for the purpose of examining the arms of the children with a view to advising the parents to allow their children to be vaccinated, provided that the School Board issue a circular to the parents of the children asking if they have any objection to that examination, and in case of such objection in any particular case that the said examination shall not take place, and that the Local Government Board and the public vaccination officers be informed accordingly."

On the principle that half a loaf is better than no bread the facilities thus afforded may be accepted by the Local Government Board and by the London public, but it must be pointed out that facilities so hedged round with conditions and qualifications do not amount to much. The steps that may now be taken are not the most effective that the law would have permitted, and will not be sufficient to ensure the safety of the London School Board children as a body from small-pox, while any estimate of the number of vaccinated and unvaccinated children in the metropolis based upon the examination of the Board's children will be untrustworthy. Presumably, parents of vaccinated children will, as a rule, offer no objection to the arms of their offspring being examined by the public vaccinator, and the objectors will be mainly the parents of a proportion of the unvaccinated; but it will not be safe to assume that they are entirely so, while figures based solely on the proportion of vaccinated and unvaccinated among those actually examined would undoubtedly be fallacious. It is to be hoped that the parents—some at any rate—of the unvaccinated will yield to the advice which the London School Board, with great consideration for their prejudices, allows to be administered to them, and that a serious spread of the epidemic will not necessitate the closing of schools on any large scale.

On Sept. 25th three more circulars emanated from the Local Government Board, each showing that our official bureau of public health is on the alert to prevent a disastrous spread of small-pox in the capital. The first is a memorandum on the steps specially requisite to be taken by boards of guardians, their vaccination officers, and sanitary authorities in places where small-pox is prevalent. The second, a supplement to the first, specially urges upon boards of guardians the value of prompt revaccination, and the necessity of seeing that their vaccination officers immediately take such steps as may be necessary to deal effectively with any arrears in the union or parish. The boards of guardians are enjoined to see that any cases of default are dealt with by the vaccination officers under the Vaccination Order of 1898, and that the addresses of unvaccinated children are ascertained from all available sources; while they are instructed to assist their vaccination officers if there is any difficulty put in the way of a quick performance of their duties. The third circular is addressed to the metropolitan borough councils, and asks the councils to specially instruct their medical officers of health to visit without delay all houses where an outbreak of small-pox has been notified, and to take immediate steps for the isolation of the patient and the disinfection of the premises.

The Nursing Home.

ONE of the most remarkable developments in medical life of recent years, arising naturally enough as a side issue from the growth of modern surgery, has been the creation and the extensive use of private surgical homes. As the success of surgery became more and more apparent since the introduction of the aseptic principles, so the number of operations performed every year increased enormously. It was not only that operations hitherto believed to be impossible, or unjustifiably risky, or at least inadvisable, were one after another brought within the ordinary list of the surgeon's operative scheme, but also the public became more and more aware that a surgical operation was no longer a dreadful ordeal with a more than doubtful issue, but that it was in many cases a painless experience with a perfectly satisfactory result. Thus an ever-increasing number of persons, particularly of the better-educated and better-off classes, came to seek the help of surgery; and surgeons, anxious to repeat the successes of their hospital experience, naturally enough strove to assimilate the conditions of operations in private to those that had stood them in good stead in hospital work. And so the private hospital and the surgical home became established things. Once inaugurated such institutions soon proved their usefulness to both patient and surgeon. Sojourn in them was necessarily somewhat expensive, but on all hands their great convenience was so much insisted upon that to be a patient in one was part of the routine of a surgical patient of some means. Now it may well be questioned whether entry into such a refuge is not sometimes insisted upon when a patient's welfare and comfort would be better consulted if he were to remain at home.

The great advantage which operating in a surgical home originally offered, as opposed to operating in a private house, was that in the former a surgeon secured all those conditions which he considered necessary to success. A clean, simply-furnished room, the proper light, plenty of nurses, and all the elaborate requirements of perfect antisepsis were at his hand, and in a building near his own home. These were rarely available in a private house. To-day the same does not hold good. We have learnt by experience that surgical cleanliness is more simply guaranteed than was at first thought possible. Antiseptic sprays altogether, and strong antiseptics with many surgeons, are things of the past. A steriliser for the instruments, the concentrated form of some chosen antiseptic, and a liberal supply of hot water satisfy nowadays the most exacting surgeon, and allow him to achieve successes rarely attempted and never surpassed a few years ago. He has also learned that there is no safety in a multitude of counsellors, and counting every fresh pair of hands a fresh

chance of danger he likes to keep down the number of nurses immediately concerned in the operation to a minimum. There are, too, more well-trained nurses now than formerly, and one of these can rapidly render any bedroom of fair size as favourable an operating theatre for all ordinary proceedings as that of any surgical home. For these reasons, unless the operation has to be done at very short notice, a surgeon who can send his nurse into the house 24 hours before the operation may usually count on success in a patient's residence just as surely as in a nursing home. Moreover, in a private house his nurses are under his own control, whereas in a home it is not unknown for the authority of an ill-trained matron, who is constantly on the spot, to bear adversely upon the directions of the surgeon.

From the patient's point of view to go into a nursing home offers this great advantage, that his own house is spared the inevitable disturbance that an operation demands, as well as the continual inconvenience of harbouring one nurse, if not two or three. The nurses, however, presuming that they are of a kind now happily becoming common, will soon be found to add to the convenience of the household, and the upsetting of the house for the operation will not be of much moment unless it is a very small abode. Unhappily, it is just in these instances that a nursing home is likely to be out of the question for pecuniary reasons, which brings us to a second criticism of the institutions. In spite of the large number of homes there is no doubt need of one, in London at any rate, where patients could be received belonging to that large class who are not suitable for hospital treatment and yet cannot afford the expense of a surgeon's fee, in addition to the hotel charges during the long period necessarily passed in a surgical home if the operation is one of any severity. Except the saving of inconvenience in his own house there is no advantage offered by a nursing home that a patient in well-to-do circumstances cannot get if he is in the hands of a careful medical attendant who has provided good nursing. There are, however, several disadvantages from which he will be free. First of all he will be among his own people, and this is not simply a sentimental consideration, but often one of therapeutic influence. We are, of course, excluding all cases in which removal from familiar surroundings and too sympathetic friends is an essential part of treatment. Again, choice of food will be freer, subject to professional advice, and the manner in which it is served will be more to the patient's taste than is possible at any rate in most nursing institutions. Quiet, too, is far more easily obtained in a private house than in a nursing home, where there is an inevitable amount of constant movement due to the passing to and fro of nurses, the arrival and departure of surgeons and physicians and anæsthetists, and the visits of friends. With regard to the visitors there is in some homes an amount of tyranny exercised that is unknown to the medical man in charge of the case but is very annoying to his patient. The matron may decide that a patient is to see nobody on a certain day, and the very visitor may be refused admittance whose presence would have favourably influenced the progress of the case.

We have mentioned the surgeon's point of view, in which must be included the great advantage to him of being able to see several patients in one visit to a home, that home being probably quite close to his residence. We have considered the point of view of the patient. Now there is a third aspect of the case requiring attention—that, namely, of the general practitioner. When the patient is placed in a surgical home it often means that visits entailing no exercise of particular skill are paid by the operating surgeon, often a comparative stranger, rather than by the general practitioner to whom the patient is accustomed and by whom he would be welcomed. The surgeon no doubt has said, "Come and see your patient whenever you like," but perhaps the home is not within the practitioner's usual round, and perhaps he knows that the patient will not relish paying for two professional visits when only one is necessary. When after-treatment requires particular knowledge and skill the case is, of course, different; but in the vast majority of instances the general practitioner, fortified by the definite instructions which he will be careful to receive from the operator, is perfectly capable of taking charge of the case. He will naturally arrange for additional visits from the surgeon as may be necessary. The surgeon should not overlook the point of view of his colleague the general practitioner nor forget that the patient, whose welfare and comfort are of course the main objects of both, may desire to see and consult his regular adviser. Such are the pros and cons of the surgical home question. From them, in our opinion, it becomes apparent that the main objects desired—namely, the patient's safety and comfort and the surgeon's and practitioner's convenience, will be as well, and often better, met if the sufferer is nursed in his own house than if he is bundled willy-nilly into the strange surroundings of a nursing home.

On Coming Back.

THE proper conduct of a holiday is a subject upon which many writers have expatiated from different aspects. We have pointed out in these columns the futility of making a holiday only a change of work, and have urged upon persons no longer in their first youth to refrain from rushing to Switzerland, immediately to climb mountains regardless of the facts that their arteries are no longer so elastic as formerly and that their heart muscle is somewhat more easily tired than of yore. But if the change from work to play has its dangers so also has the return from holiday-making to the daily grind of professional or office work. The change in methods of life is not properly appreciated, and in the desire to extend the holiday to its utmost limit the return journey is apt to be made at the greatest possible speed, so much so that we know of certain instances where the repatriated travellers have been compelled to rest for a week to recover from fatigue. But allowing that the holiday has been a real holiday, a time of rational enjoyment and of healthful exercise duly adjusted to the physical condition of the holiday-maker, the return to work is often accompanied by attacks of ill-health. It is not at all uncommon in our experience for those who return to London (or to any large city) from a country holiday to complain of suffering from a form of sore-throat. The explanation of this is probably to be found in the presence of dust in the air; and this dust, in London

at any rate, is mainly composed of horse-dung, particles of wood, and the various débris to which four or five millions of human beings constantly moving about naturally give rise. All this foreign matter sets up an irritation in the air-passages and pharynx. After a residence of some weeks in the midst of a more or less polluted atmosphere the tissues get acclimatised to the irritation and the cough and sore-throat subside, but they are one source of malaise which has to be looked for after a holiday. We do not suggest that, because continued residence in a large town begets a certain amount of tolerance, therefore it is of no avail to go away; for although a holiday may make the tissues more responsive to external irritation yet the same holiday increases the resisting powers of the body, so that it repels with greater ease the attacks of other poisons. Therefore too much importance must not be laid upon the fact that many persons who felt in robust health while away on their holidays, upon returning have the sensation of being worse in health than they were before they went away. Their natural disappointment at these sensations can as a rule be justly removed by a few optimistic words. Yet again, too little is made of the change from active exercise to sedentary life. From passing most of his time in the open air engaged in some form of exercise a man turns suddenly to working in an office or study—in the case of members of our own profession to going from one sick-bed to another. There is no section of the community so notoriously careless of its own health as is the medical profession, and while its members would impress upon the returned worker to avoid errors in diet we doubt whether it is their habit to be careful themselves in this respect. It cannot be too much insisted on that, although on a holiday a large breakfast, a large luncheon, and a large dinner may be partaken of with impunity, under the altered conditions of the working life no such heavy feeding can be right. To a man employed in fishing or shooting most of the day, or to one who spends his time in walking or bicycling, a dose of alcohol may give a feeling of contentment as well as wholesome slumber at night, which it will completely fail to do when the daily round of work is taken up again. Properly enjoyed and used a holiday is of illimitable use and if care be taken the return to work will be felt to be all the more easy for the rest enjoyed during the vacation. But it is impossible to combine, as so many think they can do, the brain expenditure of work-time with the physical digestiveness of play-time.

Annotations.

"Ne quid nimis."

MR. BRODRICK'S COMMITTEE ON THE ROYAL ARMY MEDICAL CORPS.

ALTHOUGH the report of Mr. Brodrick's Commission on the reconstitution of the Royal Army Medical Corps is not yet published there can be no indiscretion, we think, in saying that the document, when it appears, will give considerable pleasure to those interested in the branch of the service concerned. The report will recommend that the Royal Army Medical Corps should be in the hands of an advisory committee, not an unwieldy one, to be made up of the Director-General, certain officers of the Royal Army Medical Corps, certain civilian medical men, and certain War Office officials. The dignity of the position of the Director-General will, we hope, be preserved, while his responsibility will be lightened. Three changes will be suggested as making for the better scientific education of the officers of the corps. A candidate for the Royal Army Medical Corps, if on the verge of holding an appointment as house surgeon or physician, is to be allowed after passing his examination for the Royal Army Medical Corps to hold his appointment and to count the term of office as part of his military service. By this wise recommendation the Commissioners attempt to secure for the service what may be termed the flower of the medical students. Study leave, which has always been somewhat of a farce, is to be done away with, but in its place surgeons are to be gazetted to large provincial or metropolitan medical centres where they can attend hospital practice and perform their duties as military surgeons as well. Lastly, but not lastly in importance, the pay will be increased. The Commissioners have not taken into question the Indian Medical Service at all. This service is in no way touched by these recommendations, and no amalgamation of the Royal Army Medical Corps with the Indian Medical Service appears to have been contemplated.

THE NEW CRANIOMETRY.

IN his Presidential Address delivered to the Anthropological Section of the British Association Professor D. J. Cunningham, while reviewing the features which distinguish the brain of man from that of the higher apes, entered a powerful but, many will think, a premature plea for the careful consideration and, where possible, the revision, of the present system of craniometry. Broadly speaking, the cranium under normal circumstances was considered to exert but little influence in determining the head form, so that, he said, "in speaking of brachycephalic or short heads and dolichocephalic or long heads we are merely using terms to indicate conditions which result from individual or racial peculiarities of cerebral growth." Probably few anthropologists would deny this, yet if followed to its logical conclusion the cephalic or length-breadth index, for instance, should be derived from measurements taken from the interior of the skull. This is Professor Cunningham's view, which he supported by the argument that "the measurement of the long diameter of the cranium does not give the true length of the cranial cavity. It includes, in addition, the diameter of an air-chamber of very variable dimensions which is placed in front." A case in point was given. "Measured in the usual way the Neanderthal skull is placed in the dolichocephalic class, whereas Schwalbe had shown that if the brain-case alone be considered it is found to be on the verge of brachycephaly," while Huxley was quoted to the effect that no "safe basis for that ethnological craniology which aspires to give the anatomical characters of the crania of the different races of mankind" will be found "until it shall become an opprobrium to an ethnological collection to possess a single skull which is not bisected longitudinally." While regretting that our present knowledge of cerebral growth and the value to be attached to its various manifestations was still so far from complete, Professor Cunningham held that since "the areas of cerebral cortex to which man owes his intellectual superiority are now roughly mapped out, the time has come when the effect produced upon the cranial form by the marked extension of these areas in the human brain should

be noted, and the skulls of different races contrasted from this point of view." He dwelt on the development of the occipital lobe and its predominance in apes, especially the lower forms, while he discussed the great size of the parietal lobe—"a leading human character"—in relation to the morphology of the insular district. The opercula appear early, the fronto-parietal and temporal opercula being together responsible for closing over more than three-fourths of the insula. At first the lower or temporal operculum grows more rapidly upwards than the fronto-parietal grows downwards, hence the former covers in a greater part of the insula, and the Sylvian fissure formed by the approximation of the margins of the opercula runs very obliquely upwards and backwards as in apes. At a later stage, when the frontal and parietal lobes assume their more distinctly human characteristics, correlated by Professor Cunningham with the increased complexity and differentiation of the functions and movements which they govern, the fronto-parietal operculum enters into a growth antagonism with the temporal operculum which results in the latter being pressed down and the Sylvian fissure assuming its almost horizontal human position. It is especially interesting that on the left side the Sylvian fissure is more depressed than that of the right hemisphere, the surface area of the left parietal lobe being greater than that of the right. Three ready-made explanations, as frankly teleological as any ever taught in a dissecting-room, were at Professor Cunningham's service to explain this condition, and it was with a feeling of relief that we read "not one of these theories when closely looked into is found to possess the smallest degree of value." Even the obvious explanation that the increase in size of the left parietal lobe is associated with right-handedness is regarded as doubtful since it occurs in apes, among whom Professor Cunningham has been unable to satisfy himself that there is any decided preference for the use of one arm more than another. Finally, the manner in which speech assumed shape in man's early ancestors was briefly discussed, Professor Cunningham laying stress on the value of the imitative theory and following Darwin in being "inclined to believe that articulate speech came at an early period in the history of the stem-form of man."

INEBRIATE REFORMATORY HOMES.

ONE consequence of the Inebriates Act of 1898 has been the establishment in various parts of the country of reformatory homes for persons whom repeated convictions for drunkenness have rendered eligible for admission. We learn from the latest report of the Reformatory Committee that 18 county divisions and 78 county and municipal boroughs—a relatively small proportion to the whole—have availed themselves of the facilities granted under the Act for this purpose. The reformatories established comprise the following: Ashford, Brentry and Horfield near Bristol, Duxhurst Farm Colony, Girgenti (Ayrshire), Farmfield (Surrey), Ennis, and Perth. These collectively afford accommodation at the present date for 357 females and 164 males. So far the details to hand of work accomplished in these homes are very scanty. Only those obtained from the institutions at Ashford and Brentry are approximately complete. The record of results at the former home shows that of 28 persons discharged on licence during the year ending on March 31st 14 are doing well and 14 have had their licences revoked. In the case of Brentry a brief note asserts that "far too many [of persons out on licence] are doing badly." So far, then, it cannot be said that home reformatories have achieved very great success. The work, it is true, is still young and is quite in the experimental stage. It is not to be expected that it will prove entirely successful, nor, on the other hand, can it fail under reasonable conditions to accomplish a certain amount of good. How much benefit may be fairly expected of it is quite an open question. The answer to it with which experience has provided us does not so far justify an optimistic view. Happily, there is no necessary finality in speculations of this kind and hope finds a place in every counsel of reform. Another question, and a very practical one, is whether the means employed are those most likely to attain the object in view. It will not do to look upon the drunkard as a pure and simple invalid or a lunatic. If he is such his place is not in a reformatory. He is essentially one who has acquired a bad habit and has indulged it until, as always happens with our pampered fancies, it has become his master. Reform in his case, therefore, implies a process of disentanglement, the removal of temptation, the stimulation of any energy remaining in the will and its employment for wholesome ends. Not nursing, not rustic beauty, ease, and recreation are required to carry out the common rule of this kind of reformation. As judged of by photographic views the arrangements at Brentry appear too luxuriously considerate to give promise of the best results. We would rather prescribe a condition of plain, quite plain, comfort, with abstinence from alcohol, and, above all, with regular and pretty continuous occupation in any suitable form. Homes arranged on this model have a further advantage in the fact that they might be made in great measure, if not entirely, self-supporting. Such, we believe, they ought to be. The thrifty and well-doing members of the community already bear the heavy burden of expenditure for national purposes, besides the maintenance of the aged, the sick, the destitute, and the insane. They may reasonably ask that the cost incurred by vicious habits should rest as far as possible on those immediately responsible. We are of opinion that they will agree with us in upholding the general principle that inebriate reform and reformatories should be conducted as far as possible on the lines of self-support.

DRY WASHING.

IT is a familiar boast of English people that we are above all others a washing nation. Soap-and-water is a standing dish in Great Britain, but so little were we disposed to credit the habitual cleanliness of foreigners that a piece of soap in the valise was till recently the habitual companion of an Englishman on his travels. Nowadays such an item is scarcely a necessary part of the traveller's impedimenta, though there are still fair-sized hotels on the continent where soap may be searched for in vain in the bedrooms, while the smallest inn in this country would blush to the roof at such a deficiency. All kinds of theories have been raised to account for this national tendency to ablution, and most diverse qualities have been attributed to its possession. The familiarity of islanders with water, and the use of it occasioned by the national custom that led the ancient Britons to paint their bodies, are solemnly urged as the foundation of the English proneness to washing; and the fresh complexions and smooth skins of young Englishmen are held to replace the more dusky and hirsute countenances of the Latin races because of their closer and more frequent acquaintance with the articles of the washstand. With fanciful theories we have naturally no concern, and we believe that clear ruddy cheeks are a national inheritance for the same, if equally indiscernible, reasons as a tendency to roam or a dull ear for music. If, however, we do not attempt to explain the presence of a widespread habit and leave it to idle imaginations to determine why Englishmen wash, it is nevertheless our concern that such habits should be for the general welfare and should not be carried to injurious excess. It is quite obvious that even in England there are people who wash too little. It is not so generally recognised that some people wash too much. The skin is not well adapted to frequent applications of water accompanied by even the least irritating of soaps.

A tendency arises to maceration of the superficial part of the epidermis, which is too frequently removed and occasions probably too rapid a proliferation of the cells of the Malpighian layer. There is no doubt that many cases of roughness of the skin of the face come from the frequent applications of water. It is a good thing to rub the face with a soft, clean, dry towel two or three times a day. If, in addition, water is used in the morning and at night the skin will be kept in a sounder, smoother, and healthier state than if, as is often the case, soap and water are used three or four times a day. Men are not often offenders in this respect, most men sparing little time for the refinements of the toilette. Women and children, whose skins are the most easily affected by superfluous ablution, are the very persons in whom such excess is too common. They should be taught that there are dry methods of cleanliness as well as wet ones.

IDIO-MUSCULAR CONTRACTION AS A DIAGNOSTIC SIGN IN MENTAL DISEASES.

Dr. S. Soukhanoff and Dr. P. Sannouchkine of Moscow contribute the results of a lengthy research on this subject to the *Revue Neurologique* of August 15th. They refer to the statement of certain authors who claim idio-muscular contractility as an aid to the more exact diagnosis of disease—e.g., Bernstein[1] who has investigated this symptom in great detail. The investigation of Dr. Soukhanoff and Dr. Sannouchkine was carried out on 355 patients from the psychiatric clinic of the University of Moscow and the special muscle selected for the test was the biceps of the upper arm which was percussed with a small hammer. The following were the results obtained. 1. In a general way idio-muscular contraction was absent in 15·2 per cent. of the cases, it was slightly marked in 11 per cent., and well marked in 73·8 per cent. Thus, in the majority of cases of mental disease it showed itself in a marked manner. 2. The forms of mental disease classified below gave the following results :—

Form of mental disease.	Idio-muscular contraction.		
	Absent.	Feeble.	Marked.
Melancholia	2 cases.	2 cases.	17 cases.
Amentia of Meynert	3 ,,	—	17 ,,
Idiocy and imbecility	1 case.	4 cases.	15 ,,
Paranoia	1 ,,	4 ,,	15 ,,
Dementia præcox	3 cases.	1 case.	13 ,,
General paralysis	8 ,,	2 cases.	52 ,,
Acute alcoholic insanity, not including delirium tremens	1 case.	1 case.	9 ,,
Prolonged alcoholic delirium	—	—	10 ,,
Epilepsy	—	—	11 ,,

Its diagnostic value thus becomes considerable, and this is enhanced by the fact that the authors took care to exclude all phthisical cases from their research to obviate the well-known tendency to idio-muscular contraction which is developed in phthisical patients. 3. In the other forms of mental disease the frequency of occurrence of idio-muscular contraction was as follows: in secondary dementia it was 62·5 per cent., in chronic alcoholism and dipsomania it was 63·6 per cent., in the degenerative psychoses (insanity of obsessions, hypochondria, and the aboulic neurasthenias) it was 64·1 per cent., and in periodic insanity it was 68·3 per cent. 4. The authors point out that in pubescent and adolescent subjects there is normally a condition of irritability of muscle which renders the manifestation of idio-muscular contraction easy. The value of this symptom as a diagnostic measure thus increases when adolescence is past and the patients are persons of adult, middle, or old age. 5. The singular feature of its occurrence in every case of epilepsy with insanity, and of prolonged alcoholic delirium, is emphasised by the authors, who also draw from their research the conclusion that when the nutrition of the patient is low idio-muscular contractility tends to appear. It is important in every case to examine the patient for phthisis, as the absence of the latter makes the value of idio-muscular contraction as a diagnostic sign greater in mental diseases.

[1] Archives Russes de Pathologie, 1899, and Thèse de Moscow, 1900.

THE DISTRIBUTION OF PLAGUE.

A TELEGRAM from the Governor of the Cape of Good Hope, received at the Colonial Office on Sept. 18th, states that for the week ending Sept. 14th the cases of plague in the Cape Peninsula numbered 0. At Port Elizabeth the cases were as follows: Europeans, 2; natives, 8. In all other places the cases numbered 0. The deaths were as follows: Cape Peninsula, 0; Port Elizabeth, 1, a native. In all other places the deaths numbered 0. The area of infection remains unchanged and the cases of plague among persons under naval and military control numbered 0. As regards the Mauritius a telegram from the Governor, received at the Colonial Office on Sept. 20th, states that for the week ending Sept. 19th there were 24 cases of plague and 17 deaths. At Hong-Kong a telegram from the Governor, received at the Colonial Office on Sept. 23rd, states that for the week ending Sept. 21st there were 2 cases of plague and 2 deaths. As regards Egypt during the week ending Sept. 15th 11 cases of plague and 6 deaths from the disease have been reported throughout all Egypt. Of these 1 admission, 1 death in hospital, and 1 death out of hospital were reported from Port Said; from Alexandria 4 admissions, 2 deaths in hospital, and 2 deaths out of hospital; from Mit Ghamr 2 admissions; and from Benha 2 admissions.

"PUBLIC BODIES AND TUBERCULOUS FOODS."

IN THE LANCET of Sept. 14th (p. 745) we commented upon the activity shown by various public bodies with regard to the possible dangers accruing from tuberculous meat and milk. We instanced the memorandum issued by the medical officer of health of Finsbury, and we have now received a similar memorandum from the Public Health Department of the Borough of Stockport. The circular is as follows :—

COUNTY BOROUGH OF STOCKPORT.

PUBLIC HEALTH DEPARTMENT.

Great Egerton-street, Stockport, Sept. 18th, 1901.

SIR,—I am directed by the Sanitary Committee to draw your attention to the fact that it has recently been denied by Professor Koch that tuberculosis can be transmitted from animals to man. The views expressed by Professor Koch have not by any means received the general assent of scientific men.

A Royal Commission has therefore just been appointed to inquire into the whole of the question raised by Professor Koch. Pending the investigations and report of this Royal Commission the Local Government Board have impressed upon all local authorities that they should continue to take the same measures as heretofore for dealing with milk from tuberculous cows and with tuberculous meat.

The Sanitary Committee therefore desire you to understand that they are determined not to relax in any degree the taking of all proper and practicable measures for preventing the sale of tuberculous meat and milk.

In the case of meat they will, through their officers, carry out the seizure of that from tuberculous animals on the lines laid down by the Royal Commission of 1898, and in the case of milk from tuberculous animals proceedings will be taken as heretofore in accordance with the provisions of the Dairies, Cowsheds, and Milkshops Orders, 1885 and 1899, and the Stockport Corporation Act, 1899.

Notice of the provisions of these Acts has already been sent to you and information relating to them can always be obtained on application at this office.

The attention of butchers and meat-dealers is called to the fact that in cases where the existence or extent of any disease in an animal intended for human food is doubtful, or where there is any uncertainty as to the fitness or otherwise of any meat for human food, they should at once send word to the Sanitary Office and obtain the opinion of the medical officer of health or an inspector of the Sanitary Department.

When this is done nothing whatever should be removed from the carcase or meat in question until it has been seen by the Sanitary Department officials, since if anything be dressed or trimmed away or

any parts be missing the officials of the department are instructed to regard such missing parts as having been in the worst condition possible and to form their opinion as to the remainder of the carcase accordingly. The Sanitary Committee will not take any action against butchers or meat-dealers who carry out the suggestion contained in this paragraph in good faith, but they reserve to themselves the right of taking legal proceedings (even though information be sent to them as suggested) should they have the slightest doubt about the perfect good faith of the responsible person. (Signed)

MEREDITH YOUNG, M.D., D.P.H., Medical Officer of Health.

The last paragraph is, to our minds, particularly admirable. Objection to inspection, whether in the case of laundries or of school boards, is almost a proof in itself that there is something wrong, and we think that the Sanitary Committee of the Stockport Public Health Department has acted most wisely.

EYE DISEASE IN THE RUSSIAN ARMY.

THE *Voenno-Medicinski Journal* for April last contains an article by Dr. Reich on the prevalence of ophthalmic affections in the Russian army. According to a review of this contribution in the *Archives de Médecine et de Pharmacie Militaires* for the current month it would seem that although in many respects the sanitary condition of the Russian army has advanced of late years there is still considerable room for improvement with regard to eye diseases, especially among the troops quartered in the Eastern and South-eastern provinces. At first sight the proportion of 16·8 per 1000, which represents the official rate for eye affections in the Russian army, does not strike an observer as excessive, but on closer examination it will be found that this ratio refers merely to cases admitted into hospitals and takes no account of those which are treated in the infirmaries. The vital statistics of the latter class of establishment are, unfortunately, not available, but the writer of the article is satisfied that from 100 to 360 Russian soldiers out of each 1000 are treated in them for ophthalmic affections. He is also of opinion that in the year 1898 no fewer than 70,000 men were suffering from pathological changes consecutive to trachomatous conjunctivitis, this number representing 70 per 1000 of the total strength. Incidentally he mentions the fact that out of 1047 men who were invalided from four different military districts on account of affections of the organs of vision and their annexes 500 were victims to trachoma and its sequelæ.

A CLINICAL CLASSIFICATION OF INSANITY.

PROFESSOR F. X. DERCUM of Philadelphia contributes to the September number of the *Journal of Nervous and Mental Disease* a paper in which a practical attempt is made to give a clinical classification of mental disease which may be helpful to the student and general practitioner. He regards classification based upon psychology, etiology, or symptoms as unsatisfactory, and thinks that the insanities may be disentangled from one another and the various clinical forms arranged in five or six groups, the members of any one group being closely allied to one another. Thus, starting with delirium, which is manifested in the child by incoherent cries, mental confusion, and fleeting hallucinations, he divides it into febrile and non-febrile forms. The febrile form of delirium is associated with acute infectious fevers—e.g., pneumonia and scarlet fever; the non-febrile form with alcoholism, plumbism, trauma, and shock, or with the post-febrile (convalescent) stage of fevers. The special form of insanity known as "acute delirium," or typhomania, should be included also in this group. When a condition of debility or of mental exhaustion (asthenia) with stupidity is present, agencies which otherwise would give rise to delirium produce stupor. In this condition there is mental confusion attended with great obscuring of consciousness, so that conduct and expression are in abeyance. There may be all grades of stupor down to complete suspension of mental activity (anergic stupor). The three forms of mental disorder—delirium, mental confusion, and stupor—are members of one clinical family group. In mania, melancholia, and circular insanity we have another group. The identity of the etiology of mania and melancholia, the great rôle of heredity in their production (80 per cent. according to Kraepelin), and the fact that both affections occur in persons of emotional and excitable nature and in early adult life, emphasise the affinity of these disorders. Mania and melancholia both tend to recover, to recur, and to blend and alternate with one another in the circular form of insanity. Indeed, so closely are the two disorders related that Kraepelin has proposed to include both under the common designation "manisch-depressive Irresein." This group differs from the delirium-stupor group. Paranoia, or chronic delusional insanity of gradual evolution, starting from a hypochondriacal basis and passing on through hallucinations to delusions of persecution, forms a third group. Here the evolution of symptoms is slow and occupies many years, and when the delusions have fully developed a transformation of the *ego* takes place and the sense of personal identity is altered. Paranoia comes close to the mania-melancholia group in its symptoms and sequelæ. The neurasthenic insanities form a fourth group, in which are included simple cerebral neurasthenia, morbid fears and paralyses of the will (e.g., agoraphobia and dipsomania), *folie du doute*, and the other forms of insanity attended with mental obsessions. Many of these forms of mental disorder occur in "degenerates," whose mental development in childhood and youth have proceeded on abnormal lines. The fifth group includes dementia. To this belongs dementia præcox, a condition to which attention has already been drawn in these columns,[1] katatonic insanity, and general paralysis of the insane. Lastly, a diathetic group of mental disorders exists, associated with an abnormal metabolism of the body, such as the insanity of diabetes, gout, and rheumatism, and an intoxication group of mental disorders due to alcohol, lead, opium, and cocaine.

DISSATISFACTION IN THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY.

A FREQUENT correspondent writes to us from New York as follows:—"The provisions of the United States Army Reorganisation Bill affecting the Medical Department which was passed by Congress last session have given rise to much discontent among army surgeons in the United States. The grading of medical officers has been rendered lower than that of any other branch of the military services. The *New York Medical Record* of August 10th has a fair but pungent criticism of the altered conditions which has called forth a somewhat apologetic reply from the *Army and Navy Journal*. The *Army and Navy Journal*, however, undoubtedly hits the right nail on the head when it declares that the medical corps has suffered because medical men ignore their own interests, and because army surgeons have refrained from joint action. Until medical men as a body become convinced that they must exert themselves in the field of politics their interests will be regarded with more or less indifference. Organisation for medical men is essential both in army and civil life if they are to hope for fair dealing at the hands of Congress." The situation in the United States and in Great Britain as regards the army medical departments of both countries is in many respects identical, and in both countries the power of union is recognised even if its principles are somewhat ignored. Undoubtedly the pressure which our American correspondent thinks should be brought to bear on Congress might in this country well be employed in Parliament upon

[1] THE LANCET, Feb. 3rd, 1900, p. 397.

many questions of medical interest; but it is difficult with us to be a politician without being a party politician. And medical men feeling this do not enter an arena where they might often serve their generation well, while upholding the prestige of their order.

SIR JAMES PAGET'S MEMOIRS.

A GLANCE at the "Memoirs and Letters of Sir James Paget," published this week by Messrs. Longmans, Green, and Co., has enabled us to see how fascinating a book Mr. Stephen Paget has compiled in his father's memory. Though dealing with a long life and one of more importance than some to which greater volumes are dedicated, the book is not a massive one. It contains some charming portraits and other illustrations, and is divided into two portions, the first containing the whole of the memoirs left by Sir James Paget and the second giving an account of his later life. The volume is one that many medical men will be eager to possess, the reasons for which opinion we shall give after further perusal.

FEES FOR THE CERTIFICATION OF LUNATICS.

AT a recent meeting of the Southwark Guardians, held at the offices, John-street West, Blackfriars-road, the Finance and General Purposes Committee reported that they had had under their consideration the question of the amount of the fees paid to their medical officers for the certification of lunatics. They recommended the board to approach the various justices of the peace who were in the habit of dealing with the lunatics of the union with a request that they should direct a fee of 10*s.* 6*d.* instead of 21*s.* to be paid to the medical officers of the union in future, as that sum seemed, in the opinion of the committee, to be a reasonable amount for the services rendered, having regard to the fact that the medical officers were paid officials of the union. Mr. T. Cooksey, the chairman, congratulated the committee upon endeavouring to cut down expenses in view of the great increase in the board's expenditure—and the recommendation was adopted. Guardians have looked upon the fees paid to their medical officers for the certification of lunatics with much disfavour. They have an objection to the system under which the payments are made, for they have no legal control over the amounts paid. By Section 285 of the Lunacy Act, 1890, the justice orders the payment by the guardians of what he considers to be a "reasonable remuneration" for the examination and certification of a lunatic. Many guardians have expressed their opinion that a guinea is a large fee for merely, as they think, writing a statement that A. B. is a lunatic. They have no idea of the mental and physical labour involved in the daily record of the patient's symptoms; in the accurate descriptions in the case-book of every little bruise, scar, and abrasion which the patient had on his body when admitted; and in the careful examination of the whole person and notification of every abnormal appearance which are required on the day the patient is removed to asylum. The guardians have little regard for the mental strain which is undergone by the medical officer when he is dealing with the numerous "border-line" cases sent into the wards. In these he writes his certificate with a sword of Damocles over his head. The least error or mis-statement may make his certificate quite invalid, may bring him into difficulty with the Commissioners in Lunacy, may make him guilty of a misdemeanour, or may render him liable to heavy pecuniary damages. If, on the other hand, he refuses to certify on the ground of insufficient evidence, and the patient is discharged, there is the not by any means uncommon result of a suicide or a homicide, with more trouble for the medical officer. These are some of the circumstances under which we think the fee of one guinea to be thoroughly well earned. There is, however, another aspect of the question before us. The guardians, knowing from past experience the average number of lunacy fees to be paid in the year, have in many instances fixed the salary of the medical officers at a mere nominal sum for the work to be done. They have stated that they considered the fees would bring the remuneration to an adequate amount. It would not be difficult to name a large metropolitan workhouse containing about 1600 people where the medical officer receives a salary of only £50 a year. The guardians are quite aware that the lunacy fees are the real salary and that without them no medical officer would hold the post for the sum they have fixed. Bearing the fact in mind that a similar method of utilising the lunacy fees obtains at many large workhouses, let us ask the question whether the action of the guardians in requesting the justices to award diminished fees is not a departure from fair and straightforward dealing? It is not likely, however, that the justices will be influenced. They will not readily surrender any of the power they hold under the provisions of the Lunacy Act.

THE DIAGNOSIS OF ADDISON'S DISEASE WHEN PIGMENTATION IS ABSENT.

IN exceptional cases of Addison's disease the characteristic pigmentation is absent. In ordinary cases the pigmentation can be locally intensified by irritation, such as the application of a blister. This fact might have suggested the possibility of producing pigmentation by irritation in cases in which it is entirely absent, but such an experiment does not appear to have occurred to anyone. At the meeting of the Société Médicale des Hôpitaux of Paris on July 19th M. L. Jacquet and M. Trémolières related two cases in which pigmentation was thus produced accidentally. In the first, a case of spinal caries, the application of poultices produced pigmentation of the abdomen and the necropsy revealed tuberculosis of the suprarenal capsules. In the second case the patient was a man, aged 31 years, who was admitted to the Saint Louis Hospital on Feb. 28th, 1901. He was very feeble and "wasted to a skeleton." He suffered from acute and incessant abdominal pains, especially in the right iliac fossa. They were increased by movements and by light pressure, relieved by deep pressure, and became recrudescent about two hours after meals. After paroxysms of pain vomiting supervened. Slight pigmentation had recently appeared in the fronto-temporal regions and there were one pigmented spot on the upper lip and another on the lower lip. At the apex of the left lung was a cavity and at the base friction sounds were heard. Fulness was felt in the epigastrium. To relieve the pains linseed-meal poultices with a little mustard and compresses of camphorated alcohol were alternately applied to the abdomen. About a fortnight afterwards marked brown pigmentation of the abdomen was noticed. The pigmentation extended beyond the limits of application of the poultices. The hairs were not hyper-pigmented. On July 18th the pigmentation was still present and of the same intensity, though no applications had been made to the abdomen since April. The poultices and compresses were applied to the anterior surface of the right thigh. A rosy and transitory discolouration was first produced. In some days it became red and permanent. In less than three weeks pigmentation similar to that of the abdomen was produced. Linseed-meal poultices (without mustard) were applied daily for two hours to the left shoulder, beginning on June 12th. After the removal of the poultice a rosy tint remained which progressively became more and more intense and persisted

longer and longer. On July 2nd it was red and permanent and pigmentation was commencing. On July 6th the latter was well marked. In a similar manner pigmentation was produced on the calves. The importance is obvious of this method of *extériorisation de la mélanodermie latente*, as the authors term the phenomenon. The diagnosis of Addison's disease in the absence of pigmentation can thus be made possible.

THE MEDICO-LEGAL ASPECT OF WOUNDS.

IN many cases of suspected murder we have to depend chiefly on circumstantial evidence, and the most important elements in determining whether certain wounds could have been self-inflicted are their position and their extent. In THE LANCET of Sept. 14th, p. 744, we published a case of suicide in which the wounds were inflicted on the back of the neck, and in the present issue is a letter from Dr. J. Little of Maryport in which he points out that we published two similar cases in 1899. In nearly all cases of self-inflicted wounds the injuries are on the anterior aspect of the body, and the reason is obvious, for the front of the body is necessarily much more accessible; if, therefore, in any case we find that the wounds are all or chiefly situated posteriorly the first idea is that they have been caused, not by the wounded man himself, but by someone else. Yet these three cases which we have mentioned demonstrate conclusively that the mere position of the wound is no true criterion of its source. The extent of the wounds inflicted has also frequently served to distinguish suicidal from homicidal injuries, but this diagnostic point also is very fallacious. The cases already referred to, and especially a case of auto-extirpation of the larynx upon which we commented in THE LANCET of Sept. 21st, p. 801, demonstrate clearly that very severe injuries may be self-inflicted. The medical "expert witness" must exercise great caution in saying that certain injuries could not have been self-inflicted. The life of an innocent prisoner may depend on his decision.

REPORT ON LUNATIC ASYLUMS IN NEW ZEALAND.

IN the report recently issued by the Inspector-General of Asylums of New Zealand for the year 1900 it is stated that the total number of registered insane persons on Dec. 31st, 1900, was 2872, being an increase of 115 over the previous year. The public asylums number seven in all, the accommodation varying from 120 beds (Hokitika) to 625 beds (Dunedin), while there is but one private asylum which accommodates 45 patients. The proportion of the male insane to the male population of the colony is 1 to 270, and for the female insane the proportion is 1 to 351. The total insane are in the proportion of 1 to 303 of the general population, a ratio almost exactly identical with that of England and Wales. A number of interesting observations are scattered throughout the report. Dr. R. M. Beattie, the medical superintendent of Auckland Asylum (487 beds), states that about 16 per cent. of the deaths were due to phthisis, and that as long as Maori patients are admitted it will be impossible to reduce the mortality from this source. A considerable proportion of the Maoris are phthisical upon admission, while others acquire the disease with remarkable facility. At the Wellington Asylum (280 beds) Dr. W. Baxter Gow, the medical superintendent, urges the erection of a separate ward or block for the reception of acute and recent cases of insanity. Owing to want of such accommodation there is not only some degree of overcrowding, but the chances of recovery of recent cases are diminished from contact with chronic and refractory cases of insanity. At Seacliffe Asylum a suicidal patient escaped from the attendants into the bush and hanged himself before those who were pursuing him could find his exact whereabouts. Of the causes of deaths two are attributed to alcoholism, 10 to cerebral hæmorrhage, eight to Bright's disease, 10 to epilepsy, 12 to senile decay, 22 to general paralysis, 24 to phthisis and other forms of tuberculosis, 32 to cardiac disease, 40 to pneumonia, and the rest to other causes. The total number of deaths during the year amounted to 145, or 5·61 of the average number resident, a ratio which is about half that of England and Wales. The number of cases discharged as recovered during the year was 199, or 7·5 per cent., as calculated on the same basis, being about two-thirds of the recovery-rate in England and Wales. Seacliffe Asylum at Otago is the largest in the Colony; 16 years ago it was described by the then Inspector-General in his official report as "out-of-date and defective in construction." During the last 12 years extensive and thorough alterations in the building, including lighting, ventilation, and drainage, have been steadily carried out to remedy these defects, and it has now "been brought to such a condition that Otago may well be proud of it." The report is of interest as showing what enlightened medical opinion and steady perseverance can accomplish in the way of treatment of the insane in a colony as far removed from the mother country as New Zealand. "The medical superintendents [of the asylums] are," concludes the Inspector-General in his report, "without exception highly qualified and deserving of the highest confidence and esteem. No department could have better officers." The separate reports of the various asylums incorporated in the text fully bear out the view that steady progress is being achieved in the treatment of the insane in New Zealand.

SMALL-POX IN LONDON.

THERE is as yet no abatement in the outbreak of small-pox in London. We refer in a leading article to the vigorous circulars addressed to boards of guardians, sanitary authorities, and borough councils of the metropolis by the Local Government Board. During Wednesday, Sept. 25th, five cases of small-pox were notified, it appears from the returns issued by the Metropolitan Asylums Board. The deaths from small-pox, which had been seven, seven, and nine in the preceding three weeks, fell last week to three, all of which belonged to the borough of St. Pancras. The total number of cases in the isolation hospitals is now 165. At a meeting of the St. Pancras Borough Council held on Sept. 25th the report of the Public Health Committee was presented, with which was incorporated the report of the medical officer of health upon cases of infectious disease certified during the weeks ended August 31st, Sept. 7th, and Sept. 14th. There was also a further report upon the present outbreak of small-pox in the borough which was illustrated by spot maps. Dr. Sykes pointed out the difficulties of diagnosis, and with regard to the all-important question of dealing with contacts recommended either immediate vaccination or revaccination, or else a quarantine period of 14 days. It had been found effectual to quarantine all persons in an infected house for at least 14 days and only to release them upon being vaccinated. There was no legal power to do this, but in the face of the epidemic it was a serious matter for consideration. The committee had approved of the closing of certain schools, both board and national. The council by 42 votes to 13 carried the following recommendations of the committee:—

(a) That it be suggested to the guardians to instruct their officers dealing with vaccination, or their assistants, to pay particular attention to suspicious rashes and illnesses, and where no medical practitioner is in attendance to report such to a medical practitioner of experience in small-pox with a request that he shall forthwith visit and certify, if necessary.

(b) That in each ward a medical man be appointed as medical referee to be called in by the medical attendant in doubtful cases of small-pox or suspicious eruption or symptoms, and to be paid a small fee per case.

(c) That as a matter of urgency on account of the prevalence of small-pox an Order be made under Section 55 of the Public Health (London) Act, 1891, with respect to the notification of infectious diseases to apply to the borough of Saint Pancras as to chicken-pox, the Order to continue in force for a period of six months, and that a copy of the Order be forthwith sent to the Local Government Board and be advertised, and that the Order come into operation at the expiration of one week from the date of the advertisement.

(d) That four temporary sanitary inspectors be appointed for a period of three months to carry out such duties as they may be directed.

(e) That in future no candidate for an appointment or applicant for a situation, the duties of which may bring him into contact with small-pox be appointed or engaged, unless he undertakes to efficiently protect himself by vaccination or revaccination as the case may require, the requirement to apply to women as well as men.

The St. Pancras councillors as a body are evidently alive to the exigencies of the situation.

OPENING OF THE METROPOLITAN MEDICAL SCHOOLS.

WITH the exception of Charing Cross Hospital and St. Thomas's Hospital the metropolitan medical schools commence their winter session on Oct. 1st, the two exceptions mentioned starting their winter's work on the following day. Most of the schools begin their work with some sort of social function and all except St. Mary's Hospital, Westminster Hospital, and the London School of Medicine for Women end the day with a dinner, at which past and present students usually meet. St. Mary's Hospital, however, hold a dinner on Oct. 3rd, and Westminster Hospital on Oct. 4th. At St. Bartholomew's Hospital the old students' dinner will be held in the great hall of the hospital on Oct. 1st at seven o'clock; Mr. W. J. Walsham will be in the chair. At Charing Cross Hospital Mr. J. W. Taylor, Professor of Gynæcology in the University of Birmingham, will deliver an introductory address at 4 P.M. The old students' dinner will be held at the Hotel Cecil in the evening, when Mr. Charles Gibbs, late surgeon to the Langman Hospital, will occupy the chair. The St. George's Hospital introductory address will be delivered at 4 P.M. by Dr. P. W. Latham, and the annual dinner will be held at the Hôtel Métropole at seven o'clock, when the chair will be taken by Mr. Warrington Haward. Guy's Hospital house dinner of the Students' Club will take place in the college dining-hall on the opening day, but the first meeting of the Physical Society will not be held till Oct. 5th, when Sir Samuel Wilks, Bart., F.R.S., will preside, and a paper will be read by Mr. S. W. MacIlwaine on Disease and its Causation. King's College Hospital old students' dinner will be held at the Hotel Cecil, when Mr. Paul Swain will take the chair. London Hospital old students' dinner will be held in the college library of the hospital, Mr. F. J. P. Daly presiding. St. Mary's Hospital introductory lecture will be given by Dr. G. William Hill, the aural surgeon, but the annual dinner of past and present students will take place on Thursday, Oct. 3rd, at the Whitehall Rooms, Hôtel Métropole, Colonel A. B. R. Myers in the chair. The Middlesex Hospital introductory address will be delivered by Dr. T. H. Kellock, after which the prizes gained during the previous year will be distributed by Lord Howard de Walden. The annual dinner of past and present students will take place at seven o'clock at the Trocadéro Restaurant, under the presidency of Mr. J. Bland-Sutton. St. Thomas's Hospital starts with a prize distribution by Major-General Sir Ian Hamilton, K.C.B., in the Governors' Hall, at 3 P.M. During the afternoon the various departments of the hospital and school will be open for the inspection of visitors. The annual dinner will take place at the Whitehall Rooms, Hôtel Métropole, at seven o'clock, Mr. H. H. Clutton in the chair. The University College Hospital introductory lecture will be given at 4 P.M. by Dr. J. Risien Russell, and the past and present students' dinner will take place at 6.30 at the Hotel Cecil, when Sir Richard Douglas Powell, Bart., will preside. Westminster Hospital annual dinner will not take place till Oct. 4th, when Mr. Charles Stonham will preside. At the London (Royal Free Hospital) School of Medicine for Women the introductory address will be given by Dr. F. W. Andrewes on Oct. 1st at 4 P.M.

A HARD CASE.

AN action unsuccessfully brought in the Grimsby County Court recently illustrated the difficult position in which a medical man may be placed where a patient is brought to him whom it would perhaps be inhuman to send away, but with regard to whom there is doubt as to who will be liable for the services rendered. A little girl was brought to the surgery of Mr. T. W. J. Allen, the plaintiff, with a broken arm, and the board school teacher who accompanied her stated that the school board would pay for attendance upon her. The cost of attendance which was accordingly given seems to have been increased by a subsequent injury to the broken arm, but, to put it briefly, the school board repudiated altogether the liability to which it seems clear that its teacher had no authority to pledge it, and which, in the opinion of the county court judge, it would have had no right to incur in any case. Evidence, however, was given by Mr. Allen that he had, in fact, been paid on previous occasions for attendance on accidents in another similar school. In consequence of this refusal the medical man sued the parents, only to be confronted with the undoubted fact that they were poor people who neither had, nor would have, retained his services, but who, had they known of the occurrence, would have had recourse to the hospital. Cases such as these are hard upon the medical practitioner, but they show that where attendance is asked for and where there is any possible doubt as to who is to pay for it this should be made clear before the attendance is given. In cases of emergency, such as accidents, the same point should be elucidated on the first opportunity after that has been done which the circumstances demand or the benevolence of the practitioner may prompt him to do without definite expectation of reward.

"THE MEDICINE AND DOCTORS OF HORACE."

UNDER the above heading Dr. Eugene F. Cordell contributes a long and scholarly article to the August number of the *Bulletin of the Johns Hopkins Hospital*. Considering the small size of the volume formed by the extant works of Horace, his references to matters medical are fairly numerous. He uses the word "medicus" nine times and mentions a considerable number of pathological conditions. As regards medical treatment, he refers only to "fomenta," baths, and six medicinal plants—namely, malva (mallow), lapathum (sorrel), elleborum (hellebore), abrotanum (southernwood), cicuta (hemlock), and papaver (poppy). The last line of the "Ars Poetica," the poem which is placed last in most if not all of the editions, is:

Non missura cutem, nisi plena cruoris, hirudo.

Dr. Cordell states that the leech was first recommended by Themison, a contemporary of Horace, as an addition to the materia medica, but is not found in the extant writings of Celsus. Horace mentions by name two physicians, Antonius Musa and Crateras. After an outline of what has come down to us relative to these practitioners Dr. Cordell goes on to what is, from an historical point of view, the most interesting portion of his article—namely, a discussion as to whether the Celsus of Epistle i., 3, and the Celsus Albinovanus of Epistle i., 8, are not, in fact, identical with A. Cornelius Celsus, the medical writer. This theory seems to have been first brought forward and championed by Giovanni Ludovico Bianconi in his "Lettere sopra A. Cornelio Celso scritte dal Conte Ludovico Bianconi al celebre Abate Girolamo Tiraboschi," published in 1779. These letters, which are 12 in number, have been reprinted in the second

volume of the edition of Celsus brought out by Dr. Salvatore de Renzi of Naples (vol. i., Latin, in 1851; vol. ii., Italian, in 1852), where they fill 82 large pages. Bianconi's theory is discountenanced by Orelli, the commentator on Horace, but is upheld by Targa, the commentator on Celsus, and by Sprengel in his "History of Medicine." Bianconi's "Dissertatio de Celsi Aetate" is contained in the editions of Celsus by Targa published in Leyden in 1785 and in Cologne in 1806. In a German version of the Epistles of Horace by Carl Passow (Leipsic, 1833) Celsus Albinovanus is translated "Celsus of Albinova," a rendering which Dr. Cordell considers to be at least plausible, although Albinova is not known as a geographical name.

DANYZ'S VIRUS AS A DESTROYER OF RATS.

AN investigation has recently been undertaken under the direction of Dr. M. J. Rosenau, assistant surgeon U.S. Marine Hospital Service, at the Hygienic Laboratory, Washington, D.C., of which he is director, to test the efficacy of the cultures of bacillus typhi-murium which Danyz recommended for the destruction of rats. An article by Danyz descriptive of his method appeared in the *Annales de l'Institut Pasteur* for April, 1900. Dr. Rosenau found out that a large primary dose of the virus proves fatal but that a small dose is uncertain. The virus as a destructive agent, like a chemical poison, depends for its effect upon the amount ingested. A rapid deterioration in virulence occurs when it is exposed to the action of air and light or when it becomes dry, as is very apt to happen when laid out for rats in the wild state. Against this the virus has a very decided advantage over the usual chemical agents used to kill rats that in so far as is known it is harmless for man and domestic animals. On the whole, the investigations conducted by Dr. Rosenau do not appear to have shown that this virus is likely to prove of any special value as a rat destroyer on a wholesale scale.

THE DISPOSAL OF POULTICES AND OLD DRESSINGS AT THE LONDON HOSPITALS.

ON Sept. 10th a letter appeared in the *St. James's Gazette* from an anonymous correspondent on the subject of the use of pigs' flesh as food being the means of spreading disease, especially cancer. The writer stated: "I was recently told by a friend of mine, who personally inquired of some bargemen on the Thames what the substance was which filled the barges, that they told him it was composed of poultices from London hospitals, which went by barge down the Thames to the Medway to feed the pigs, which eventually became what is known as 'dairy-fed' pork!" This is a grave accusation to make against the London hospitals, and seems to be another phase of the scare started by an evening contemporary in August last, and commented on in the *City Press* of the 21st of that month. It was then stated that there was a great risk of typhoid fever being spread owing to the fact that St. Bartholomew's Hospital dressings were carted promiscuously through the streets of the City on the way to Letts' Wharf, where they are destroyed in the furnace. This charge has been refuted, and as a proof of the precautions taken it is stated that not one of the men engaged in the work has ever suffered from disease. We have made inquiries at the great London general hospitals, and have received what is practically the same reply from all. We are informed, as we knew that we should be, that the invariable practice is to collect the used poultices and dressings and to take them direct to a destructor, where they are completely consumed, being reduced to dust and clinker which are taken away eventually by the parish authorities. It seems to us a great pity that benevolent institutions should be libelled in the press by anonymous correspondents.

THE opening of the new Pathological Laboratory of the University of Oxford will take place on Saturday, Oct. 12th, at 3.30 P.M. Sir William Church, Bart., President of the Royal College of Physicians of London, Dr. G. Sims Woodhead, Professor of Pathology in the University of Cambridge, and others will take part in the proceedings.

THE annual meeting of the Continental Anglo-American Medical Society will be held at Paris on Tuesday, Oct. 8th, at 5 P.M., at the residence of Dr. Bull, 4, Rue de la Paix. The annual dinner of the society will be given at the Hôtel Ritz on the same evening at eight o'clock, when Sir James Crichton-Browne will preside.

A MEETING in support of Dr. J. G. Glover's candidature for election to the General Medical Council has been called for Friday, Oct. 4th, at 8.15 P.M. It will be held at the residence of Dr. E. A. White, 1, Highbury-place, N. Dr. Glover will make a statement and Sir Thomas Barlow, Dr. Danford Thomas, and others will take part in the proceedings.

AT the introductory lecture at the opening of the Winter Session at the Royal Veterinary College, which will be delivered by Dr. E. M. Crookshank on Tuesday, Oct. 1st, at 12 noon, Mr. Albert Brassey, M.P., will occupy the chair.

WE have received the report for the year ending Dec. 31st, 1900, of the Principal Medical Officer of the Uganda Protectorate. The report is of great interest.

THE ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1900.

[FIRST NOTICE.]

THE annual report of Dr. Arthur Whitelegge, the Chief Inspector of Factories and Workshops, is published in the form of a Blue-book consisting of over 660 pages. It contains a large amount of interesting information, and shows very clearly the magnitude of the work which is entailed in carrying out the inspections necessitated by recent laws passed chiefly in the interests of the industrial classes.

The arrangement of the items of information given in the report is the same as that which was adopted last year. The body of the report is divided into three parts. There is in the first place a general summary of the work done. This is written by the chief inspector. It consists of about 20 pages, including tables, and is followed by 22 voluminous appendices (pp. 25–153). The second part consists of sectional reports made respectively by the superintending inspectors, the principal lady inspector, the examiner of particulars, the inspector under the Cotton Cloth Factories Acts, the engineering adviser, and the medical inspector (pp. 154–506). The third part consists of tables (pp. 507–664). There is a table of contents, consisting of one page only, but there is no index. This omission very much diminishes the value of the report as a work of reference and must necessarily cause great loss of time to anyone who may wish to investigate one particular subject dealt with in the report, for the information in many instances will be found scattered through the book, and it requires diligent search and the expenditure of much time to collect it. The staff of inspectors of factories and assistants consists of a chief inspector, a deputy chief inspector, five superintending inspectors, a medical inspector,

an engineering adviser, over 70 inspectors, and a large number of assistant inspectors. The cost of the travelling expenses alone of these officers amounted to over £10,000 for the year 1900. In these circumstances it seems wasteful that the valuable results obtained by this large staff should not be published in a readily useful form, that is to say with a full index.

During the year 1900 the number of factories on the district registers amounted to 95,664, showing an increase of 4093 for the year. The number of workshops had also increased to the extent of 3463, and amounted to 137,648. It is interesting to note that there has been an increase in the number of laundries in which power is used to the extent of 237, whilst the number of those without power has been diminished by 536. But, still, at the end of the year 1900 it appears that the number of hand laundries was considerably more than double that of those of newer fashion, (the exact figures being 1804 and 4972).

The number of places at which inspections had to be made under special rules was 7529. There are altogether at the present time 23 branches of industry for which special rules have been drawn up for the protection of the workers. The works which are carried on under these rules are as follows: (1) white lead; (2) red and orange lead; (3) yellow lead; (4) lead smelting; (5) paints, colours, &c.; (6) enamelling iron plates; (7) turning and enamelling iron hollow ware; (8) turning and enamelling metal hollow ware; (9) lucifer matches; (10) earthenware and china; (11) making of transfers for earthenware and china; (12) explosives (where nitro-benzole is used); (13) chemicals; (14) bichromate; (15) electric accumulator; (16) yellow chromate of lead; (17) brass; (18) aerated water; (19) wool-sorting; (20) wool-combing; (21) vulcanising of indiarubber by means of bisulphide of carbon; (22) flax working; and (23) humidifying textile factories.

The public attention which was directed some time ago to the disastrous effects of phosphorus poisoning amongst the people engaged in the manufacture of lucifer matches appears to have been the indirect means of causing a falling off in the trade. Amended special rules were drawn up for the regulation of the works in which yellow phosphorus was used. These rules were established as the result of arbitration in the case of the London factories, and were afterwards adopted in the case of 18 other works. Of these factories eight have since been closed and two have discontinued the use of yellow phosphorus. During the year 1900 it appears that only three cases of phosphorus poisoning were reported and none of them proved fatal.

A very great benefit has of late years been conferred on the workers in textile fabrics by the enforcement of what is usually called the "particulars clause," a statutory provision made to secure for the workpeople full and correct particulars of the work which they were required to do and a statement of the amount to be paid for such work. Before this simple act of justice was made a legal obligation, it was a common practice in some places for the employers to defraud their workpeople to the extent of from 12 to 18 per cent. "Previous to the passing of this section," according to the report of Mr. T. Birtwistle, Her Majesty's Examiner of Particulars, "it was very common in certain parts of Lancashire for 36's and even 38's twist to be delivered to the winders and described as 32's and paid for as such; hence the winders (females) in such cases were performing more work than they were paid for. This," he adds, "to some extent applied to almost every branch of the textile trade, but not in the same degree as in the case of the winders, except it may be said that the weavers in a certain district of Yorkshire were almost as badly off." There are now 6227 textile factories in the United Kingdom and 1083 textile workshops in which piece-work rates are wholly or partially paid. During the year 1900 4787 visits were made to textile factories and 1619 to textile workshops, but the Examiner of Particulars found it necessary to lay no more than 20 informations against the employers for neglect in carrying out the regulations which it was his duty to supervise. A conviction was secured in every case in which proceedings were taken, but the average amount of the penalty inflicted amounted to no more than 7*s.* 9·6*d.*—a fact explained by Mr. Birtwistle as probably being due to the fact that the offences were chiefly those of omission and due to carelessness. The number of cases in which legal proceedings have been instituted for offences under the "particulars" section has gradually diminished; in 1898 it was 47, in 1899 it was 30. The examiner concludes his extremely lucid and satisfactory report by saying, "Now we rarely find the particulars of the work deliberately omitted or supplied incorrectly."

It is perhaps not generally known that the manufacture of aerated water is attended by considerable risk to those engaged in the process. During the year 1900 159 accidents were reported, and in one case death was caused. The danger arises from the bursting of the glass vessels into which carbonic acid gas is introduced at a high pressure, and serious accidents frequently occur from this cause. It has long been the practice in some factories to insist that the workers engaged should adopt some protection for their eyes, and "goggles" or masks have in some places been in general use. Some of the workers, however, strongly objected to the use of the instruments of protection which were provided for them. The objection to the use of the guards proceeded entirely from those for whose benefit they were ordered. They alleged that injurious effects on the sight were induced by their use. A special inquiry was undertaken to investigate this question, and Mr. Simeon Snell, ophthalmic surgeon to the Sheffield Royal Infirmary, was engaged to make a report on the matter. In the course of his inquiry he visited 17 factories, at which something like 3500 men were in the aggregate employed. It seemed that in the factories in which discipline was generally good there was no difficulty in enforcing the wearing of protectors. In large factories a knowledge of the danger of their occupation was usually appreciated by the workers, for accidents were not of infrequent occurrence. At one large factory, however, although protectors had "in a way" been in use for from 20 to 30 years, it happened that when the Home Office issued special rules making their use compulsory the men declined to wear them. Dr. T. M. Legge and Mr. Snell made in this case a very complete inquiry into the reasons which led the workmen to object to the use of the protectors. They found, in the first place, that a fair trial had not been given to them, but that in many instances their use had been rejected after they had been worn for such short periods as one and a half hours, one hour, or even half an hour. Amongst the complaints were that "a heated sensation over the eyes" was produced and several men complained of headache. One found that when he took off the covering "things danced before his eyes." More than one complained of aching of the eyes and one that after removal of the mask he noticed "a mist before his eyes." No defects of vision were found and it became evident, as a result of the inquiry, that the symptoms complained of were subjective. Careful investigation also proved that in the present conditions of the trade both glass bottles and syphons are liable to burst. New bottles are more liable to burst than those which have been previously used. As a result of a careful enumeration specially made at a large factory Mr. Snell was informed that out of a total quantity of 222,520 bottles filled 1608 had burst. The amount per cent. of bottles which burst is, it is true, a small one, but the inquiry showed that it amounts to something like 1 per cent. The only means by which a workman can be protected from the risk of injury is by wearing a mask or shield, and the following summary gives the results of Mr. Snell's investigations:—1. There is an absence of evidence of injury to eyesight from the use of protectors; on the contrary, there are numerous instances of operatives making no complaint after using protectors for 20, 30, or even 40 years. 2. At the factory at which most complaints had arisen as to the protectors it was found that no real use had been made of them in the way that was daily the practice in other similar factories. 3. The occupation, in consequence of the frequency of bottles bursting, is one very prone to accident, the danger not being confined to the fillers. All the workers and visitors to the place where bottles are being filled, labeled, or stacked are liable to injury. Bottles placed in boxes, stacked, or being moved on trolleys should be covered with cloth or sacking. 4. Eye "goggles" do not afford sufficient protection. The masks at present in use admit of improvement; the meshes should be fine so as to prevent fragments of glass passing through, and in view of the possibility of injury to the vessels of the neck they should be connected with a leather collar or be continued downwards to afford protection to the neck and its vessels. They should be as light as possible and fit without undue pressure. A recently devised shield which, resting on the shoulders, leaves the face free behind it is being brought into use and appears to be in some ways an improvement on those generally in use.

Miss Anderson, the chief lady inspector, very justly gives

fully the report of Miss Squire on the accidents and application of special rules in aerated water works. Her observations were exhaustively and cleverly carried out and she has brought to light some things which appear to have escaped the vigilance of other observers. The total number of reported accidents does not, she avers, correctly represent the number of accidents which occur, and this for more than one reason. In the first place, according to the regulations an accident to be "reportable" must cause an injury which prevents the sufferer from carrying on his work for five hours on any one of the three working days following the accident. "A comprehensive view of the meaning of 'ordinary work' is," Miss Squire believes, "frequently taken in aerated water works, where it is commonly said that the worker must do as the foreman tells her. Such a case," she continues, "I brought before the magistrates who said that inasmuch as the injured person's occupation was altered by her accident it was reportable." Again, many painful accidents happen which are not sufficiently serious to prevent the victim from shortly resuming work and the hands of bottlers and wirers usually show cuts and scars in all directions. Miss Squire thinks that a perfectly satisfactory gauntlet has not yet been invented. The face-guards supplied to girls have often been entirely unsuitable; when those provided are light in weight and clean she has found little opposition to their use by the workers. Some of the guards supplied have been either "heavy fencing masks, men's size," or have had no proper means for fixing them on the head. In one case Miss Squire found all the girls wearing them on the tops of their heads. The manager showed the special rule notice as to wearing the protectors but pointed out that there were no directions as to *where* they were to be worn. The protectors were old and dirty, they could not be worn on the face without flattening the nose, and "no self-respecting woman would put her face into one"; moreover, even a self-respecting woman would be unable to see if she did put her face into one, such was the faultiness of their construction. Fortunately, in the case of this factory matters were subsequently improved and every girl was found on a future visit to be wearing a protector in a proper manner. It cannot be too strongly insisted on that glass bottles charged with carbonic acid at a high pressure are a constant source of danger to all those who are brought near to them.

THE GLASGOW INTERNATIONAL EXHIBITION.

(FROM OUR SPECIAL COMMISSIONER.)

AFTER the great International Exposition held at Paris last year the small exhibition at Glasgow this year affords at least this advantage—namely, that it is possible to see the whole of the exhibits at the latter place, while in the former such a task was beyond the strength of any human being. Indeed, the growth in size of international exhibitions—and in this matter Glasgow follows the general rule—is a serious obstacle to the holding of such exhibitions of the world's produce. In 1889 the total admissions to the Paris Universal Exhibition amounted to 30,350,297 and in 1900 to 50,859,955. At the Glasgow International Exhibition of 1888 the total admissions were 3,975,904; this year the admissions up to Sept. 20th have been 7,815,675 and they may reach 9,000,000 before the exhibition closes. Thus the proportionate increase is even greater in Glasgow than it was in Paris. From both the moral and the health point of view the gathering together of so many people in the Exhibition grounds is an important factor. In the evening the admission is only 6*d*. and a large number of the poorer classes are drawn from the public-houses to the Exhibition. Here there is less drinking, for they are enjoying the bands, the illuminations, and the fireworks. There are also a great number of bungalows with sheltered terraces where tea, excellent French pastry, and other light refreshments are provided at moderate cost. Great crowds thus sit out in the open air, and being exposed to public view they are more inclined to behave themselves. This is much better from the moral and the health point of view than the comparative privacy of a public-house bar, while intellectually the exhibits themselves are object-lessons. The great increase in the number of visitors as compared with the last exhibition held in Glasgow demonstrates that these advantages have been widely appreciated. In the softening of the manners of the rougher sections of the population, in the reduction of the amount of whisky drunk, and in providing more elevating and refining means of relaxation and enjoyment, the Exhibition has been an unalloyed benefit to many hundreds of thousands of poor people.

In regard to the educational influence of the Exhibition, however, it is to be regretted that its international character has not been well supported. It does seem as if the Exhibition has suffered from a tacit boycott. Russia and France alone make a respectable show, Japan comes next with some very beautiful art objects, and there is a very small Austrian section; but German art, science, and industry, which were so very prominent at Paris last year, are unrepresented. There are a few isolated individual exhibits from various nationalities, such as the ever-present Van Houten's cocoa from Holland, a few rugs and curios from Persia and Morocco, and a little furniture and art pottery from Denmark, but practically speaking, there are only two foreign sections worthy of the name, those of France and Russia. Neither of these contains anything of special interest from the medical or sanitary point of view. There are perhaps half a dozen chemical exhibitors in the French section, but perfumery, such as that of the celebrated firm of J. Simon, is more prominent than pharmaceutical products. La Compagnie Générale d'Eaux Minérales, 13, rue Taitbout, Paris, exhibits some of the best known mineral medical waters of France, but the surgical instruments for which French manufacturers have acquired a reputation were missing. On the other hand, there are a good many French wines, alcohols, and preserved fruits, vegetables, that are of interest from a health point of view.

What attracts visitors most in the Russian section is the large and original pavilion containing the exhibits of the Russian department of woods and forests. The development of the wood industry in Scotland would be of great benefit. Close to Glasgow the barren hills that slope down to the numerous lochs and tributaries of the Clyde might well be planted with trees. These, in the course of time, could be cut and slid down to the water below, tied together into rafts, and towed to the great neighbouring centres of industry. This would supply very healthy winter outdoor work and help to reconstitute physically a race that is being seriously deteriorated by town life and work in factories.

On entering the Exhibition by the main entrance the Russian and French sections are immediately to the right. Passing the Russian furs, bronzes, and furniture, we come to the sanitary section. The exhibits here are not numerous, but they are good as far as they go. The first reached are those of Messrs. Twyford, Limited, who, among many other things, show a new hospital bed-pan and urinal bottle-sink. There are flushing-pipes on which the bottle and pan are placed upside down, and by pressing on a pedal below the sink they are scoured out. A third pedal flushes out the entire sink. This obviates any soiling of the hands. In regard to baths most of the manufacturers seem to have been impressed with the danger of scalding the patients. Such an accident did occur recently. The idea is that the protests or complaints of a patient, especially if of unsound mind, may be attributed to his unwillingness to take the bath, while in reality they are due to the over-heated condition of the water. Hence there are various attempts to provide a bath where the heat of the water shall be automatically regulated and the risk of accident through the carelessness of attendants obviated. Messrs. Twyford's patent asylum bath fitting has no handles. A key is employed to turn on the tap, but the aperture for inserting the key to turn on the hot water is covered over, and this cover can only be removed by turning on the cold water. The hot water must therefore be mixed with cold as it enters the bath. The Stockport surgical lavatory shown by this firm differs from other lavatories, inasmuch as it stands independently and free from support four inches away from the wall. It can thus be washed and kept clean behind as well as in front. The detachable metal screw cone employed by this firm to join closet-pans to soilpipes is a very useful contrivance. Being of gun-metal it cannot wear out and may be used over and over again. It joins pipes together in a moment and it may be as rapidly undone. No cement is employed

and the joint is perfectly air-tight by reason of its accurately fitting cone shape and the pressure of the screw fastening. Messrs. Twyford have also a revolving pathological table made of one single block of enamelled hardware, the surface of which is fluted for draining purposes. The table stands and revolves on a large central pedestal, and round the base there is a circular open drain over which the pipe from under the table discharges the water coming from the surface. This is well adapted to post-mortem examinations. Nor should it be omitted to note that all the hardware of this firm is said to be made of leadless glaze and thus its manufacture does not endanger the health of the workers.

Next to these exhibits are the very large stands of Messrs. Doulton and Co., Limited, comprising art pottery as well as sanitary hardware. Most of the exhibits shown here were described last year in the columns of THE LANCET when speaking of the Paris Exhibition, where Messrs. Doulton were appointed members of the jury and attained the highest possible distinction. This firm also puts on the market bath fittings with valves that can be so arranged that the water cannot exceed a given temperature. These can be fixed to give any desired degree of heat, but the regulators are then entirely cased up so that they cannot be tampered with in any way. Even when the water is turned on very rapidly no concussion is produced; the valves close gradually and therefore there is no risk of breaking the joints. Of course there are also specimens of the closets, the sinks, the lavatories, the urinals, &c., for which Messrs. Doulton have a world-wide reputation.

On the other side of the passage are the exhibits of Messrs. Shanks and Co., and they also have a bath where the water is turned on by a handle that moves round a dial from "shut" to "cold," then to "tepid" and to "hot." Here it stops and must be moved back to "shut." The valves can be regulated to suit the pressure and the desired heat is thus obtained. There are likewise some syphonic silent closets in which the surface of the water is larger than the aperture of the seat and therefore the sides of the pan cannot be splashed. Messrs. Shanks also show an elegant model bath-room where all the fittings are of glass and nickel. Next to them, Messrs. Buick and Son of Alloa, near Stirling, have a variety of sanitary ware, but they are of well-known models which present no new features. Finally, there are working models of the Exeter septic tank with the alternating gear by which the sewage from the septic tank is discharged first into one filter and then into another. Here the system can be studied in its practical application, while on shelves there are bottles containing samples of the filtrate. I was informed that some 450 schemes for the disposal of sewage on this system have been prepared, and 130 carried out.

Close by the sanitary section are the exhibits of the colonies of Rhodesia and Queensland and of women's industries. The latter are of interest to those who consider the employment of women not only as a social but also as a sanitary problem. In this latter respect it is pleasing to note how numerous and varied are the light and artistic forms of work for which the physique of women is well suited. Some Indian exhibits, Ceylon teas, and the French section fill up the remaining space of this side of the main building. On the left side of the main entrance nearly all the exhibitors are British or colonial. Here the principal things from the health point of view relate to food-supply, such as Quaker oats, biscuits of all sorts, infant foods, and invalid foods. Of course, Messrs. Brand and Co. are prominent in this section, distributing meat lozenges to hungry visitors; while the samples of protene and of plasmon, with a little Mellin's food and a cup of bovril, which can be obtained for the asking, would suffice as a substitute for lunch to any curious and bold investigator bent on testing the merits of these well-known commodities. The wines include Glendenning's port wine mixed with beef extract and malt. The well-known vintages from Australia hold a prominent place. There are notably the Vifera brand and the Orion brand which have been analysed in THE LANCET Laboratory with good results. The more these wines are exhibited and known the better, for they are wholesome and preferable to alcoholic liquors which are often not so pure or safe.

From the main building a long gallery leads to the machinery hall. This gallery contains the shipbuilding exhibit which constitutes one of the most remarkable and successful features of the Glasgow Exhibition, though it is out of the province of these criticisms. By the side of these temporary structures a permanent red-stone palatial building will remain as the Glasgow Palace of Arts. There are here some fine sculptures and an extensive collection of English paintings. It is unfortunate that there should be so few foreign paintings in these fine art galleries. Close by the art section, in the grounds, there are some field ambulances and a tortoise-shell tent, capable of holding 10 beds, fully equipped. Here are folding water-proof cloth hand-basins and buckets and folding chairs, tables, &c., all very light and transportable. The stretchers are provided with rollers so that they can serve as beds in an emergency and can be pushed along while the patient is lying upon them. The portable stove has a flue that divides and can therefore be readily packed. Next to this there is an officers' tent and finally Messrs. Humphreys's tin and wood base hospital. The tables are of enamelled iron with glass slabs. There are louvre windows on either side of the ward and also in the pointed roof.

Crossing the river Kelvin, which winds through the Exhibition grounds, a square building is reached, devoted to heating and lighting. The first thing which is seen on entering is a long array of open fire-grates, mostly on the Teale principle, and by the door there is an historical armchair. These are exhibits of the Carron Co., who in 1801 built the *Charlotte Dundas*, the first steamship ever floated. It was employed as a tug on the river Clyde; the armchair is made from the wood of this vessel. This firm now own the Carron line of steamers, but their principal business relates to heating and lighting. They have kept well up to the times both for coal-grates and gas-stoves. They have even a drawing-room grate which revolves; on one side a coal fire can be lit, and if the other side is brought forward then a gas fire can be ignited. Their gas cooking stoves, large and small, are so contrived that all the fittings therein can be easily taken out and thoroughly cleaned. One of their open grates is composed of tubes carrying air under the fire, then up behind, and out by the mantelpiece, thus stimulating the circulation of the air in the room and warming it at the same time.

The Richmond Gas Stove and Meter Co. have also a very large display. The burners of their gas-stoves are readily lifted off, so that they can be dipped into hot water and cleaned. Messrs. Fletcher, Russell, and Co. exhibit the Waverley inlet ventilator. The air is not admitted in a direct line but is thrown upwards and deflected downwards on a copper gauze. By such means a direct draught is obviated. They have also Bunsen burner irons, which are clean and economical and avoid the using of unwholesome coke-stoves in workrooms. For baths they can heat two gallons of water to 50° F. in one minute. The cost in gas for heating a large bath would rarely exceed one penny. Messrs. R. and A. Main and Co. have Bunsen burner stands on which irons can be placed and heated in three minutes sufficiently for ironing during 10 minutes; these would consume one pennyworth of gas in eight hours. Here, again, is another method of improving the sanitation of the workshop. Messrs. Smith and Wellstood, Limited, show the improved and convertible open and close fire range which they are supplying to the Glasgow Improvement Trust which manages the cheap tenements built by the corporation for the poor of that town. They are 36 inches in length and cost £3 16s., but they are not provided with boilers. Such are the principal exhibits of interest to the sanitary reformer. They are not numerous, but they present some interesting features.

Apart from sanitation, the Exhibition itself is well worth a visit. A visitor need not fear, as was the case in Paris last year, that he will have to leave before seeing half of the exhibits he would have liked to examine. The Exhibition is small enough for a visitor to see all that is likely to be of interest to him in the course of a few days, particularly as there is an almost complete absence of side shows to lead him astray from his main purpose. The great increase in the number of visitors as compared with the last Exhibition held in Glasgow shows how much the present show has been appreciated and the citizens are to be congratulated on their success.

ASYLUM REPORTS.

Warwick County Asylum (Annual Report for 1900).—The average number of patients resident during the year was 948 and comprised 384 males and 564 females. The admissions during the year amounted to 224, of which 103 were males and 121 were females. Of these 190—viz., 82 males and 108 females—were first admissions. Dr. Alfred

Miller, the medical superintendent, states in his report that among the admissions were the following incurable cases—viz., 13 idiots, 17 epileptics, 11 general paralytics, and 28 cases of chronic insanity. "It will be seen from the above figures that one-third of the number of cases admitted had no chance whatever of recovery and naturally among the remainder a large number will turn out incurables." Dr. Miller adds that "idiots and epileptics should certainly never be received into county asylums to associate with curable cases. What can be more detrimental to recovery from mental disease in pregnancy than the constant and trying association with patients such as the above?" The number of patients discharged as recovered during the year amounted to 72—viz., 37 males and 35 females, or 7·5 per cent. of the average number resident. The deaths during the year amounted to the same number—viz., 72, composed also of 37 males and 35 females, or 7·5 per cent as calculated on the same basis. Of the deaths three were due to senile decay, eight to pneumonia, nine to cerebral hæmorrhage, nine to phthisis and other forms of tuberculosis, 12 to general paralysis, 16 to epilepsy, and the rest to other causes. A plan for two isolation blocks for male and female phthisical patients having been sanctioned by the Commissioners in Lunacy the buildings are in process of erection. The asylum has acquired recently an adjoining farm on a long lease and has been able to improve the dietary of the patients as regards vegetables and eggs. At the time of the report in the preceding year 11 male attendants of the asylum staff were out at the front in South Africa; since then seven have returned and good accounts have recently been received of the rest. "Entering on the twentieth year of my service in the asylum," says Dr. Miller, "I am naturally able to look back on many changes. Great sanitary improvements have been effected and important additions have been made to cope with the increasing number of cases coming under our care. But the most important question I feel bound to ask is: What advancement has been made in our curative methods and what have been their effect on the recovery-rate?" Thirty years ago, when asylum buildings were certainly not what they are at present and the amount of personal comfort supplied was far less, the average recovery-rate, as shown in the reports of the Commissioners in Lunacy, was 11 per cent. of the average number of patients resident. To-day it is barely as much, being but 9¼ per cent. "New drugs have certainly been tried by the score; ..... baths, massage, and electricity have all been successfully used in their turn, and yet our results are no better than at the commencement of the period. ..... Personally, I am led to think," concludes Dr. Miller, "that there will be no material increase in the number of recoveries until there is a more general provision for treating special forms of mental disease in separate buildings. Epileptics, idiots, imbeciles, senile and other incurable cases should be kept apart from the recent and curable cases. The latter class should certainly have buildings set apart for their reception and managed rather on the lines of a hospital where treatment could be carried out under the most favourable surroundings and where patients ..... would not be living in association with those incurables to whom I have alluded." The Asylums Committee state that the weekly charge for maintenance has been raised from 8*s.* 9*d.* per head to 9*s.* 0½*d.* since June 30th, 1900. The Commissioners in Lunacy state in their report that the wards were bright and cheerful, the dormitories were clean and in good order, and the medical case-books were perfectly kept.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6261 births and 3704 deaths were registered during the week ending Sept. 21st. The annual rate of mortality in these towns, which had been 21·0, 19·4, and 18·3 per 1000 in the three preceding weeks, further declined last week to 16·8 per 1000. In London the death-rate was 15·6 per 1000, while it averaged 17·7 in the 32 large provincial towns. The lowest death-rates in these towns were 11·2 in Bristol, 11·6 in Swansea, 11·8 in Derby, and 12·2 in Birkenhead; the highest rates were 20·7 in Bolton, 22·7 in Gateshead, 25·2 in Burnley, and 25·6 in Sunderland. The 3704 deaths in these towns last week included 733 which were referred to the principal zymotic diseases, against 1506, 1256, and 971 in the three preceding weeks; of these 733 deaths, 491 resulted from diarrhœal diseases, 70 from "fever" (principally enteric), 49 from diphtheria, 41 from whooping-cough, 40 from measles, 39 from scarlet fever, and three from small-pox. The lowest death-rates from these diseases last week were recorded in Bristol, Cardiff, Swansea, and Leicester; and the highest rates in West Ham, Salford, Burnley, Sunderland, and Gateshead. The greatest proportional mortality from scarlet fever occurred in Derby; from whooping-cough in Swansea; from "fever" in Plymouth, Nottingham, Salford, Huddersfield, Hull, and Sunderland; and from diarrhœal diseases in Burnley, Sheffield, Hull, Sunderland, Gateshead, and Newcastle. The mortality from measles showed no marked excess in any of the large towns. The 49 deaths from diphtheria included 27 in London, three in West Ham, two in Halifax, two in Sheffield, and two in Hull. Three fatal cases of small-pox were registered in London, but not one in any other of the 33 large towns. There were 153 cases of small-pox under treatment in the Metropolitan Asylums hospitals on Saturday, Sept. 21st, against 74, 92, and 137 on the three preceding Saturdays; 37 new cases were admitted during the week, against 52, 31, and 62 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital, which had been 3008, 2994, and 3064 at the end of the three preceding weeks, had further risen to 3098 on Saturday last; 427 new cases were admitted during the week, against 303, 346, and 457 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 124 and 116 in the two preceding weeks, rose again last week to 124, but were 48 below the corrected average. The causes of 45, or 1·2 per cent., of the deaths in the 33 towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Leeds, and in 12 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Preston, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·8 and 17·5 per 1000 in the two preceding weeks, further declined to 16·2 per 1000 during the week ending Sept. 21st, and was 0·6 below the mean-rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 7·9 in Perth and 11·3 in Dundee to 20·9 in Aberdeen and 21·3 in Greenock. The 517 deaths in these towns included 53 which were referred to diarrhœa, 13 to whooping-cough, six to "fever," five to measles, four to diphtheria, and two to scarlet fever. In all, 83 deaths resulted from these principal zymotic diseases last week, against numbers decreasing from 174 to 74 in the seven preceding weeks. These 83 deaths were equal to an annual rate of 2·6 per 1000, which was 0·7 below the mean death-rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had declined from 129 to 38 in the six preceding weeks, rose again last week to 53, of which 24 occurred in Glasgow, 10 in Edinburgh, six in Dundee, five in Aberdeen, four in Leith, and three in Paisley. The deaths from whooping-cough, which had been 13 and 10 in the two preceding weeks, rose again to 13 last week, and included seven in Glasgow, three in Edinburgh, and two in Leith. The fatal cases of "fever," which had been six and 12 in the two preceding weeks, declined again last week to six, of which five were registered in Glasgow. The deaths from measles, which had been eight in each of the two preceding weeks, decreased to five last week, and included two in Glasgow and two in Edinburgh. The four fatal cases of diphtheria, two of which were registered in Glasgow, showed a slight increase upon the numbers recorded in recent weeks. The deaths referred to diseases of the respiratory organs in these towns, which had been 60 and 79 in the two preceding weeks, further rose last week to 81, but were 20 below the number in the corresponding period of last year. The causes of 24, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·5, 20·6, and 22·2 per 1000 in the three preceding weeks, further

rose to 23·4 per 1000 during the week ending Sept. 21st. During the past four weeks the death-rate has averaged 22·4 per 1000, the rate during the same period being 16·8 both in London and in Edinburgh. The 168 deaths of persons belonging to Dublin registered during the week under notice were 8 in excess of the number in the preceding week, and included 30 which were referred to the principal zymotic diseases, against 35, 35, and 25 in the three preceding weeks; of these, 20 resulted from diarrhœa, four from whooping-cough, three from "fever," two from diphtheria, and one from scarlet fever. These 30 deaths were equal to an annual rate of 4·2 per 1000, the zymotic death-rates during the same period being 2·6 per 1000 in London and also in Edinburgh. The fatal cases of diarrhœa, which had been 28, 29, and 22 in the three preceding weeks, further declined last week to 20. The deaths from whooping-cough, which had been one, two, and one in the three preceding weeks, increased to four last week. The mortality from "fever" exceeded that recorded in any recent week. The 168 deaths in Dublin last week included 47 of children under one year of age and 32 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight excess over the respective numbers in the preceding week. One death from violence and five inquest cases were registered during the week; and 59, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Fleet Surgeon H. S. R. Sparrow to Pembroke Dockyard. Staff Surgeons: W. G. K. Barnes to the *Formidable* and J. Donnell to the *Empress of India* and to the *Cæsar* on recommissioning. Surgeons: A. F. Fraser to the *Formidable;* W. R. Center to the *Ramillies;* and R. Kirby to the Chatham Hospital. Civil Practitioner J. Owen to be Surgeon and Agent at Goodwick.

ROYAL ARMY MEDICAL CORPS.

Captain H. L. G. Chevers, retired list, is selected for service with the troops in South Africa. Lieutenant H. W. Long has arrived in the Eastern District for duty. Lieutenant W. C. Stevenson and Lieutenant M. C. Beatty are posted to the 3rd Station and Cambridge Hospital at Aldershot. Lieutenant McAllum is attached to the Cambridge Hospital at Aldershot for duty. Lieutenant R. V. Cowey is under orders for India. Captain I. A. O. MacCarthy is transferred from the Poona District to the Aden District, and Lieutenant G. E. Leary from the Mhow District to the Aden District. Colonel M. O'Connell, Principal Medical Officer, Peshawur District, is transferred to the home establishment. Major L. Heywood takes over medical charge of troops, Station Hospital, &c., Portland. Captain H. D. Mason assumes medical charge of the Royal Artillery, Mounted Infantry, Royal Engineers, District Staff, and details, Marlborough Lines, Aldershot. Captain J. H. Power is appointed for duty with the Royal Horse Guards at Windsor.

N.B.—The date of the grant of the local rank of Colonel to Lieutenant-Colonel W. A. May whilst Principal Medical Officer of a division in South Africa is Jan. 19th, 1900, and not as stated in the *London Gazette* of Nov. 2nd, 1900.

The undermentioned officer of Lord Strathcona's Corps is, on the disbandment of the corps, granted honorary rank in the Army with permission to wear the uniform of the corps. Dated March 16th, 1901.

Temporary Captain C. B. Keenan, D.S.O., Medical Officer, to be Hon. Captain.

VOLUNTEER CORPS.

Artillery: 8th Lancashire: Surgeon-Lieutenant J. D. Wright resigns his commission.

Royal Engineers (Volunteers): 1st Middlesex: Surgeon-Lieutenant H. M. Macnaughton-Jones resigns his commission.

ARMY MEDICAL SCHOOL, NETLEY.

The eighty-third session of the Army Medical School will commence on Wednesday, October 2nd. The session will be attended by 25 surgeons-on-probation for the Indian Medical Service and two for the Royal Army Medical Corps. The following is a list of those entering the school:—

INDIAN MEDICAL SERVICE.

A. E. J. Lister.	R. M. Carter.
T. F. B. Williams.	R. L. Hagger.
S. H. L. Abbott.	D. G. R. S. Baker.
A. W. Greig.	T. W. Harley.
R. E. Lloyd.	J. W. McCoy.
J. Woods.	R. A. Willcocks.
H. B. Steen.	T. G. F. Paterson.
D. Munro.	D. G. Rai.
E. Bisset.	R. M. Barrow.
J. E. Clements.	W. R. J. Scroggie.
A. W. Overbeck Wright.	J. R. J. Tyrrell.
R. J. Bradley.	L. P. Farrell.
E. A. Loch.	

ROYAL ARMY MEDICAL CORPS.

B. A. Craig.	C. T. R. White.

SOUTH AFRICAN AFFAIRS.

There have been several untoward events recently in South Africa arising out of a recrudescence of highly enterprising activity on the part of the Boers. Whatever importance these may have from a military point of view, they possess little or no medical interest beyond the fact that besides entailing a lamentable loss of life they lead to an increased number of surgical cases in our hospitals and to the belief that every temporary success on the part of the Boers can only have the effect of prolonging the sufferings caused by the war. In the reverse at Blood River the losses sustained by Major Gough's force amounted to three officers and 17 men killed, three officers and 28 men wounded, and five officers and 272 men captured, a total of 328. In the case of the 17th Lancers the fighting was more severe and the losses among the troopers in killed and wounded, relatively to the number engaged, were much heavier.

According to the last weekly report received from Lord Kitchener the wearing-down process steadily goes on, the notable feature being the number of Boers captured and the losses on the part of the Boers in the way of ammunition, vehicles, horses, and cattle, as compared with the number of Boers returned as killed and wounded or surrendered. There are no sick returns of their forces available, and we have not, nor have we ever had throughout the campaign, any means of knowing what their losses from disease have been. There is still, considering the season, much enteric fever among the British forces, however, as may be seen from the published sick returns.

DEATHS IN THE SERVICES.

Lieutenant-Colonel James Moran, I.M.S., on Sept. 20th, in London. He entered the service in 1875 and served in Afghanistan in 1878–79 (medal). He was appointed Lieutenant-Colonel in February, 1900.

Surgeon-General William Alister Catherwood recently. He was Principal Medical Officer of the Naini Tal District.

Correspondence.

"Audi alteram partem."

"WAS LUIGI CORNARO RIGHT?"

To the Editors of THE LANCET.

SIRS,—I should be gratified to think that Dr. Cameron Kidd is right in assuming that medical men are fully alive to the necessity of thoroughly exercising the infant's jaws and teeth by mastication. Be this as it may, it is certain that the young human does not adequately exercise his jaws; did he do so we should not see so many cases of defective development. Dr. Kidd holds, and claims that medical men in general hold, that in order to secure adequate exercise of the teeth we should rely on "artificial exercise of the jaws" rather than on the mastication of food. This view is, I believe, a mistaken one, though I do not for one moment contend that the chewing of rings, corals, and the like, may not have its use. The young human is not a rodent; his teeth are essentially for the purpose of biting food, and not for gnawing hard non-nutrient substances, like a mouse or a rat. Dr. Kidd argues that the child only spends about an hour over his meals every day, and that this time is inadequate for the proper development of the jaws. Well, an hour's

good exercise of the jaws every day would, I believe, go a long way towards securing their normal development; unfortunately, however, the child's food is generally so pappy that little mastication is required; if it contained more hard and dry ingredients, not only would he have to masticate more vigorously, but he would be obliged to spend a longer time over his meals. There is a further advantage of allowing the child to expend his abundant masticatory energy in chewing food rather than rings and corals which Dr. Kidd appears to overlook. I refer to the fact that the chewing of food prepares it for the stomach. One of the objections I have urged against feeding children too exclusively on paps is that food of this kind is swallowed without being properly insalivated, and, seeing how powerful is the diastasic action of human saliva, this is surely undesirable. Providing food is such that it compels abundant mastication it is astonishing how digestible it generally is, but if we feed our children almost wholly on soft food how can we secure this preliminary preparation by the mouth?

Dr. Kidd points out that one of the dangers of giving small children solid food is that they may choke, but this danger can be reduced to a minimum by taking simple precautions, and it is better to run this remote risk than to subject the child to the certain evils resulting from the employment of too pappy foods. Finally, Dr. Kidd argues (in favour of relying chiefly on artificial means for exercising the child's jaws) that even if he is fed on the food of adults such food does not, on account of its softness, afford proper exercise for them. This is perfectly true and, being true, how grave an indictment against our present system of feeding! The child needs, in fact, food requiring more abundant mastication than that consumed by most adults, and there is no difficulty in obtaining suitable foods of the kind.

To Mr. Sellors "it is not apparent that defective growth of the jaw is due to lack of mandibular exercise." If he will not grant me this I fear I cannot convince him, any more than he can convince me by his mere *ex cathedrâ* utterances—e.g., "Dr. Campbell mistakes the significance of the phenomena attending the commencement of dentition. ..... I regard (*sic*) the flow of saliva. ....." Anxious as I am for light, eager as I am to get at the truth, I cannot accept the mere *ipse dixit* even of Mr. Sellors.

I am gratified to find so competent an authority on dietetics as Dr. Willoughby Gardner joining the crusade against pap-feeding and supporting the view that the present system may have much to do with the production of adenoids. I agree with all he says. The suggestion that the constant use of the rubber teat may be a cause of this affection is worthy of consideration. Dr. Gardner brings out two important points on which we shall do well to dwell: 1. That adenoid disease is more common among us than it was among our ancestors. This is no mere surmise; it can be proved in a very simple way. A large proportion of those afflicted with this disease show defective development of the upper jaw; if, therefore, in a given community such defective development is rare we may be sure that adenoid disease also is rare in it. Now, if we examine the skulls of our ancestors of even a few generations back, we find a low percentage of such defects, just as we do in the skulls of primitive communities—e.g., those in the museum of the Royal College of Surgeons of England. 2. That the disease is met with under the most favourable sanitary conditions in respect of fresh air, warm clothing, abundant food, muscular exercise, "in the houses of the rich and even of medical men," and that it continues to abound in spite of improved sanitation.

I would ask your readers to keep these two cardinal facts clearly before them. What factor, we have to ask, is in operation now which was not in operation—or, if so, in a minor degree only—among our ancestors? In seeking an answer to this question one naturally turns to the food, and I myself have little doubt that it is to be found in this direction. Do we adequately realise how greatly our food has changed during the past few generations? While it is more abundant and nutritious than it used to be it is at the same time much softer and more pappy. In my first letter I complained that the food of the young human is too much limited to pap, and that in consequence of this the jaws and their accessory cavities do not properly develop. Defective development of the nasal cavities, the naso-pharynx, and the pharynx must surely predispose them to disease. Consider, further, the influence of mastication on the flow of blood and lymph in the tissues of the mouth and accessory cavities. No lymph flows from the cut lymphatic trunk of a limb when at rest; it is only during rhythmic muscle contractions that the lymph circulates. Hence it follows that vigorous mastication implies a vigorous flow of the lymph in the tissues of the mouth and its accessory cavities, and defective mastication a defective flow. Now, Sirs, I would ask your readers which is the more liable to get adenoids—a child with well-developed buccal, nasal, and pharyngeal cavities, the tissues of which are periodically flushed by a vigorous flow of blood and lymph, or one in whom these cavities are ill-developed and the flow of blood and lymph thereof not stimulated in the normal fashion? Am I chimerical in suggesting that the former is? Am I rushing to extremes in urging our profession resolutely to put its foot down on the uncommon-sense practice of feeding children almost exclusively on squash?

I do not, of course, contend that this is the only factor in the causation of adenoids. The fact that the disease may occur in young infants and even (so it is said) at birth proves otherwise; the causation of even the simplest thing is complex, and no result is produced by a single cause. Mr. Sellors asserts that adenoids are "frequently met with in the first few months of life." Such is not my experience. I am desirous in this connexion of knowing, and I shall be grateful if any of your readers can help me to ascertain, whether the disease is more common in bottle-fed children than in those who are brought up at the breast. I should expect it to be, inasmuch as the former exercise the oral apparatus far less in obtaining their milk than do breast-fed children.

I am, Sirs, yours faithfully,

Wimpole-street, W., Sept. 22nd, 1901. HARRY CAMPBELL.

"WORKHOUSE NURSING."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 21st, p. 813, Dr. F. S. Toogood writes: "My opinion is that with adequate salaries and proper government there would be no lack of good nurses even in our smaller infirmaries." No doubt Dr. Toogood speaks from his own experience, but his opinion is not in agreement with that of some of those whose special work is the inspection of Poor-law infirmaries. One of the general inspectors of the Local Government Board thus reports: "The nursing staffs, at any rate in the larger workhouses, are being slowly strengthened, but the same difficulty still exists in getting nurses who have had thorough training, and I do not think that in this part of England (Durham, Northumberland, North Riding of Yorkshire, and parts of Cumberland) the blame can be wholly laid on the salaries offered or the quarters provided" (Twenty-ninth Annual Report, 1899–1900, Local Government Board, p. 149). Another inspector reports: "The chief obstacles in the way of better nursing continue to be inadequate accommodation for nurses and the rather limited supply of experienced nurses" (idem, p. 126). Another inspector remarks: "The difficulty in obtaining and retaining the services of nurses for workhouses continues to increase" (idem, p. 93). The reports teem with similar observations.

Then, again, there is the question of "proper government." Presumably your correspondent means the interference of masters and matrons with the nursing arrangements. But so long as the sick wards are contained within the workhouse walls so long must these officials have some responsibilities towards nurses, patients, and nursing. The nurses will necessarily be under the master as regards general discipline, and the patients likewise; the nursing will be subject to the matron in respect to the supply of necessaries; and the wards will come under the care of the master as regards repairs and such like. There must, therefore, be relations between workhouse nurses and the higher workhouse officials. The past as well as the present show the practical impossibility of these two sections of the staff working together in harmony. Thus, one of the general inspectors reports: "I regret to have to report friction between masters and matrons on the one part and nurses of the infirmaries on the other. ..... I do look forward to the day when, in workhouses of any size, the infirmaries will be detached." The mere fact that the wards are actually within the workhouses exercises a very bad influence upon the recruiting of nurses and probationers. The subordination of the nurses to their social inferiors is fatal. Yet these things cannot fail to be present in the smaller infirmaries.

Dr. Toogood questions the necessity of having highly-trained nurses in country workhouses. Here he is in

conflict with the opinion of Dr. A. H. Downes, Medical Inspector of the Local Government Board, who, in a memorandum dated April, 1892, makes the following observation: "Humanity and economy alike dictate that the sick poor in workhouse sick-wards should receive nursing treatment not less efficient than that which is now afforded in general hospitals and in well-administered cottage hospitals." Later in the same memorandum he remarks: "..... It should always be remembered that although the sick are mostly chronic a large number are of such a kind as to require constant care and attention." It is impossible, therefore, to accept Dr. Toogood's method of solving the nursing difficulty in country workhouses by supplying the infirmaries with untrained nurses. The guardians' efforts to secure trained nurses for their sick wards, too, indicate *their* opinion as to the necessity for trained nurses. Then as to the difficulty of getting or training nurses. A large number of boards of guardians passed important resolutions on this subject in 1900. With one exception all the general inspectors refer forcibly to it in their last reports. How are trained nurses to be obtained in sufficient quantity from outside? The Poor-law service compares unfavourably in attractions with the general hospitals, the nursing institutions, the district nursing associations, and such like. It requires a certain amount of special training before outside nurses can be put into responsible positions in workhouses. The nurses who have come from general hospitals find their ideals in the way rather than otherwise, and the life is extremely monotonous. Except in the higher posts they do not care sufficiently for the service to remain any longer in it than they can help. I do not think that it will ever be sufficiently attractive to nurses trained outside to induce many of them to fill the lesser posts. Under the present conditions they are strongly repelled from workhouse service.

To turn from the nurses to the sick, the country workhouses are mostly out of date. "It is undoubtedly the case that since workhouses were established under the Poor-law Amendment Act, 1834, the circumstances connected with the administration of relief and the character of those for whom accommodation in workhouses has to be provided have so materially changed that arrangements originally adequate and in accordance with the spirit of the times have ceased to be so" (Circular letter of the Local Government Board to boards of guardians, Jan. 29th, 1895). One of the general inspectors in his last report refers to the workhouses in the west of England as being "at least half a century old." He says: "..... There are a good many workhouses in the west where improved accommodation for the sick is much needed and where, I believe, that even if existing rooms were vacated ..... their conversion into sick wards would at best be only a makeshift arrangement, and nothing but the erection of a new infirmary on modern lines would give really satisfactory results" (p. 111). It is the same all over the country, and boards of guardians are spending very large sums annually in trying to improve these ancient structures or in building small infirmaries attached to them; the latter are in nearly every such case too small to train probationers properly and must be dependent upon nurses trained elsewhere. Dr. Toogood says that it is impossible to train probationers in country infirmaries because of the want of suitable training material. But lower down he contradicts this, for he says: "The larger infirmaries can and do train their nurses as thoroughly and as fully as any of the hospitals." My scheme is so to combine the patients of the small infirmaries as to form institutions large enough to be capable of training probationers. Your correspondent says that my scheme would mean the expenditure of millions. The fact is, however, as I have already shown, that boards of guardians are wasting immense sums of money annually on "improvements" of the existing buildings or in badly-considered new buildings. About £100,000 were expended on improving existing workhouse infirmary buildings in 1899-90. Other large sums were spent in improving some of the separate infirmaries. It is time that parochial politics gave place to the general interests of the Poor-law service and that these sums should be spent on institutions calculated to benefit the whole service and in furtherance of some general scheme of organisation.

There is one more difficulty which Dr. Toogood seems to consider as final in the matter of the scheme I have drafted. This is the distance which patients would have to be carried to the central institutions. But the extreme distance of any of the unions from the central institution to which they are affiliated would only be 15 miles by road or 30 by train. Surely Dr. Toogood would not think this too far! The removal of a patient would, of course, be subject to the certificate of the medical officer of the district workhouse. (My scheme provides for the nursing of acute cases at their own unions.) Country people think nothing of such distances, and patients in a critical condition often travel up to general hospitals from far longer distances.

Finally, I would say that one leading feature in my scheme is the establishment of one standard for the nursing of every case which enters the sick wards of a workhouse, small or large, in town or in country. The pioneer work of the Workhouse Infirmary Nursing Association was directed to this end, and it only ceased to train nurses when, while feeling that the system should be self-supporting, it decided that the supply of nurses had become too large a question to be dealt with by a voluntary association. So far from "making spies and rebels of" its nurses it was almost invariably the rule that when its support and encouragement were withdrawn (for any reason) from its nurses that they found it impossible to stay any longer in the workhouse infirmary. The desire which is constantly expressed that the Association would restart its work of training nurses at once disproves any such uncalled-for charge as that which Dr. Toogood makes and which he should withdraw.—I am, Sirs, yours faithfully,

Fellows-road, N.W., Sept. 22nd, 1901. F. R. HUMPHREYS.

NORTH INDIA SCHOOL OF MEDICINE FOR CHRISTIAN WOMEN.

To the Editors of THE LANCET.

SIRS,—Seven years ago inquiries were made by the women medical missionaries of the Punjab as to the possibility of obtaining the assistance of native Christian girls of good family as fully-qualified house surgeons, anæsthetists, and nurses. The result of these inquiries showed that if a school was provided which gave full and thorough medical training for women only it would meet with every possible encouragement; therefore, in the following year, the above hospital and school were opened in Ludhiana.

This hospital is unique, in that it is the only medical school for women in India where the students are taught by women, where they can study apart from the Hindu and Mahomedan male students, and where they can receive their clinical teaching in a hospital for women and children. That it has proved a success is evident from the following facts:—(1) That it is recognised by Government as a medical school; (2) that 11 different societies have sent students for training; (3) that eight medical students, five compounders, eight nurses, and six midwives have already successfully completed their course of study at the school and are now engaged in medical mission work in connexion with seven different societies; (4) that 16 medical students, 16 nurses, and two compounders are still in training; and (5) that many applications are received for trained workers and the reports received about most of the trained students are very encouraging, both as to the success of their medical work and the interest which they show in the spiritual welfare of their patients. Besides alleviating bodily suffering it may reasonably be hoped that the influence of the Christian medical students will aid the progress of Christianity in India.

As the medical school is not yet affiliated to any university the students are at present only eligible for the Government examination for hospital assistants and not for any university degree. Yet there are many well-educated Indian girls who would be able to take university and medical degrees qualifying them for holding responsible posts in the mission field and who would be allowed by their parents to do so if they could study at a women's college. The University of Lahore is willing to affiliate the school as soon as three more members are added to the teaching staff and when good laboratories for anatomy, chemistry, physiology, and bacteriology, &c., have been provided. The 100 hospital beds required to ensure sufficient clinical teaching are already established. In order to build and furnish these laboratories and an operating theatre, and to supply the outfit and the passage of the extra members of the staff, a sum of £5000 is needed. If this money can be raised and these improvements carried out the students will then be eligible for any university degree and will become, on passing the

necessary examinations, members of the recognised Indian medical profession. To attain this object the committee (consisting of the Lady Kinnaird, the Lady Macnaghten, Miss Maynard, Mrs. Percy Flemming, M.D. Lond., Miss E. Brown, M.D. Brux., the Bishop of Calcutta, Sir Charles Bernard, Dr. W. J. Smyly, Dr. E. Sargood Fry, and Mr. A. Pearce Gould) make an urgent appeal for funds. Subscriptions will be gratefully received by the Lady Macnaghten, 198, Queen's-gate, London, S.W., and Miss E. Brown, M.D. Brux., 120, St. James's-road, West Croydon, Surrey, or may be sent to the "North India School of Medicine Fund," Union Bank (Tottenham Court-road Branch).

We are, Sirs, yours faithfully,

F. A. MACNAGHTEN, } Honorary
E. BROWN, } Secretaries.

"THE CHEAP PISTOL."

To the Editors of THE LANCET.

SIRS,—Your sound common-sense annotation upon the indiscriminate manner in which cheap firearms are sold everywhere and the announced determination of the American Government to deal with the class of people from whom these assassins emerge urge me humbly to suggest that our Government should join with the Americans (and I hope all the European and peace-loving Governments) in passing a universal law that every person of every nation should not be allowed to carry any description of arm or weapon that could be used to endanger the life of any other person or animal without a permit or licence; and, further, that no person or persons should be allowed to supply or furnish to anyone else such arms or weapons unless the intended buyer was duly licensed or officially authorised. In addition, manufacturers and salespeople should be licensed to follow their avocation, all licences to be renewed annually and every change of address duly given to the proper authorities directly the change is made.

I am, Sirs, yours faithfully,

Ebury-street, S.W., Sept. 23rd, 1901. D. T. BOSTEL, sen.

"STOCKS AND CROSSMAN *v.* WATSON."

To the Editors of THE LANCET.

SIRS,—THE LANCET of July 13th, containing your leading article on the above case, has just reached me. I think that from a médico-legal point of view, as well as from a purely surgical one, it is of great interest. Mr. H. H. Clutton and Mr. Victor Horsley were of opinion "that the injury to the shoulder might have predisposed it to dislocation and that an injury subsequent to the bicycle accident ..... might have produced it." Is it not possible that this is more common than is generally supposed? When the ligaments of a joint are badly torn it should not be a very difficult matter to produce luxation subsequently, especially in the shoulder-joint, with the shallow glenoid cavity and the large head of the humerus. It has happened to me to have had under my care two cases which illustrate what I mean, though they were not in the shoulder-joint.

1. About 20 years ago I was called to see a woman, aged 30 years or thereabouts, who had fallen and injured her wrist. There was certainly no dislocation—one could scarcely be mistaken in such a case—but the joint appeared to have been severely strained. I applied a light splint and ordered a cooling lotion. A day or two afterwards I called and found that the patient had removed the splint and had been sweeping. I declined to continue in charge of the case, as my instructions were disregarded, but meeting her some time afterwards I found that there was a partial dislocation; it was easily replaced, but readily slipped out again. I wish I could remember the details more accurately, but I have no notes of it, and 20 years is a long time.

2. In November, 1899, the Sikh sergeant in command of the detachment of military police stationed at our mines was knocked down by a tramcar loaded with firewood. He had his little son, aged about two years, in his arms at the time, and in endeavouring to save him from injury, in which he was fortunately successful, paid less regard to himself. The only injury of consequence was to the knee-joint. I saw him within half an hour of the accident and there was certainly then (or while he was under my care) no dislocation. Severe inflammation followed, with a good deal of pain. He got very frightened about himself (he is a very nervous man) and ordered a boat to take him to the station at the mouth of the river, the district headquarters. He walked to the boat, a distance of about 100 yards, though I had ordered him to be carried. When at Kuantan his nervousness only increased, and a steamer being at the dock bound for Singapore he went (ran, I was told) to it and tried to get on board. He had to be brought back by force. About two months ago I examined him with the Residency surgeon of the State. There was an undoubted lateral displacement of the bones of the leg. The articular surface of the external condyle of the femur could be distinctly felt and there was a marked curvature of the whole limb.

I do not suppose my experience is at all peculiar; doubtless many others could supply histories of similar cases.

I am, Sirs, yours faithfully,

J. W. ROLPH,

Medical officer, Pahang Corporation, Limited.

The Mines, Sungei Lembing, Kuantan, Pahang, Malay Peninsula, August 20th, 1901.

"A PECULIAR METHOD OF SUICIDE."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 14th, p. 744, a description is given by Mr. C. A. J. Wright of Leytonstone of a method of committing suicide, and you remark that you should think it unprecedented. If, however, you will turn to THE LANCET of June 22nd, 1889, p. 1242, you will find a description of a suicide on somewhat similar lines under the care of Mr. Hulke at the Middlesex Hospital, and another by myself in THE LANCET of Oct. 19th, 1889, p. 791.

I am, Sirs, yours faithfully,

Maryport, Sept. 23rd, 1901. JAMES LITTLE.

"THE ELECTROLYTIC TRANSMISSION OF SULPHUR."

To the Editors of THE LANCET.

SIRS,—My letter of August 24th seems to have given Dr. F. W. Smith the impression that I wished to belittle his valuable observations on the electrolytic deposit of sulphur from the Harrogate waters. Far be it from me to detract in any way from this new application of an old principle. Dr. Smith is in the van of progressive medicine, and I perfectly recognise the value of the investigations which he has made. But at the same time I must demur to his use of the word "discovery" in connexion with this subject. Doubtless Dr. Smith has been the first to apply the principle of cataphoresis in hydrotherapy, and I hasten to congratulate him upon the impetus which his investigations will certainly give to hydrotherapy all over the world. The principle of cataphoresis, however, which is the whole soul of the matter, has long been known. In 1858 Theodore Clemens, as a result of clinical experiments, claimed beneficial results from the electrolytic transmission of iodin through the skin. In 1859 B. W. Richardson made exhaustive experiments in the production of local anæsthesia by the cataphoretic introduction of a mixture of aconite and chloroform, by means of which he was able to perform many operations painlessly. But the profession at large was chary of adopting a method which was theoretically sound but which to the hyper-sensitive palate of prejudice might smack somewhat of charlatanism. The industrial arts, however, as Jacoby remarks, quickly recognised the value of the method. For instance, the tanning of hides by electricity became quite general when it was learned that by means of the usual tanning solution and an electric current a hide could be tanned in four days, while by ordinary methods it would require from 10 to 12 months to complete the process.

There are certainly factors which militate against the adoption of this method as a means of general medication, not the least of which is the fact that comparatively small quantities of a medicinal agent can be transmitted and these become rapidly eliminated by the emunctories. But as a method of local medication the method is more promising, especially if Morton's plan of rendering the part to which the application is to be made as far as possible anæmic beforehand be employed.

I am, Sirs, yours faithfully,

CHARLES J. NEPEAN LONGRIDGE.

St. George's Hospital, S.W., Sept. 25th, 1901.

"THE HABITUAL INEBRIATES ACTS."

To the Editors of THE LANCET.

SIRS,—As one who has worked for many years among the class from which the habitual inebriate is largely drawn I was pleased to read the very pertinent remarks of Dr. L. A. Parry on this subject in THE LANCET of Sept. 21st, p. 786.

It seems to me that either the scheme of private or local reformatories must altogether fail and the entire class of inebriates become the special care of the State, or else the managers of the former institutions must make up their minds to a radical alteration of their present "rose-watery" rules and procedure. Lady Henry Somerset refers to "dangerous" cases being sent to her. Now, with the greatest respect for this lady's opinions, I prefer to take the view which I believe is unanimously held by prison officials—i.e., that inebriates are far more undisciplined than felons. In other words, the inebriate (continuing, like Dr. Parry, to speak mainly of the female variety) usually *is* "dangerous" in the sense of being a brutalised, half-unsexed virago, who on the slightest thwarting of her individual desires will indifferently assault, as likely as not with the nearest lethal weapon, whosoever may have incurred her displeasure. What does she care for the flowers and the gardens, the cleanliness and the food—all the "sweetness and light" of the reformatory? She would gladly barter all for a single half-quartern of rum, and meanwhile she sighs for the fighting, the squalor, the obscenity of her filthy lodging-house or slum. What if she did find herself at short intervals in gaol? The sentence was not as many weeks as she is now serving years, and at the worst it served to recruit her powers for fresh debauchery or the propagation of a race of degenerates. I have been told on what I believe to be good authority that many of the women whom Lady Henry Somerset doubtless classifies as "dangerous" have shammed insanity or have committed assaults or damage with the single idea of escaping from the reformatory. Could anything be more farcical? The climax of absurdity is reached by one institution, which I forbear to specify, which insists on the *sexual purity* of its candidates for admission; as if an inebriate were not the one woman of all others whose loss of self-respect has long robbed her of such an attribute.

I am, Sirs, yours faithfully,

Sept. 23rd, 1901. A. W. P.

SOME MEDICAL ASPECTS OF THE PAN-AMERICAN EXPOSITION AT BUFFALO.

(FROM OUR SPECIAL CORRESPONDENT.)

IN former communications to THE LANCET[1] respecting the model brigade field hospital exhibited at the Pan-American Exposition the most important features were described. With an account of the United States army ambulance a description of this exhibit will be complete.

The United States army ambulance of the latest pattern is intended to be drawn, when in the field, by four mules and has a total weight, unloaded, of slightly less than 1400 pounds. The inside width of the wagon-box is 82 inches, its length over all is 106 inches, and the length of the litter space is 91 inches. There are hinged seats, capable of accommodating 12 patients when seated, these seats swinging back out of the way against the sides of the ambulance when the litter is used for recumbent patients. A stout post, permanently fastened in position, rises from the centre of the litter space in front to the roof of the ambulance. This post is provided with leather-covered metallic hooks, about half-way up, which receive the inner handles of the two litters, forming the upper tier. A similar post at the rear of the ambulance provides support for the rear of the same litter shafts, the post swinging up out of the way and being strapped to the roof when not in use. The two litters of the upper tier are supported on their external aspect by having the litter handles of the outer poles inserted in loops of leather straps suspended from the ambulance roof. The lower tier of litters is loaded directly on the ambulance floor, between the supporting posts and the packed seats of the ambulance. The latter thus has accommodation for four recumbent patients or for two recumbent patients and six seated. The fact that both recumbent and seated patients can be carried at the same time is of great practical importance. The ambulance is furnished with small hammocks, hung along the sides, similar to those used in sleeping cars, for the carriage of the patients' effects. The roof is of light wood, covered with "pantasote," a new material which is waterproof, fireproof, durable as leather, and not readily torn by brush or overhanging branches. The wagon wheels have broad tyres and iron axles. There are accessory springs, so that the vehicle rides as easily with three or four occupants as when loaded with eight or ten. Water is carried in metallic receptacles underneath the floor of the ambulance and behind the rear axle. It is readily accessible, yet when the tail-gate of the wagon is dropped, as in loading patients, the containers are perfectly protected from injury. The box underneath the driver's seat is intended to contain three boxes of the same size so as to be interchangeable, one containing dressings, another stimulants, and the third condensed foods. The front wheels of the ambulance "cut under," so that the vehicle can turn in its own length. This ambulance is a result of a careful study of the transportation of wounded by a board of medical officers from experience gained during the recent Spanish-American war. As showing its superiority over other patterns it is only necessary to say that it has lately been adopted in the Canadian militia and that samples have already been ordered for trial by the Governments of Great Britain, France, Spain, and Chili.

That the equipment of army field hospitals of the United States is in a high degree excellent is freely admitted by army surgeons of other nations. The commendations passed upon these hospitals in China were very high, and when the fact is taken into consideration that the ones in use there were not nearly so well equipped as they are at present it will be easily understood that the arrangements of the United States Army Medical Department are worthy of close attention by similar departments of other armies.

[1] THE LANCET, Sept. 14th (p. 749) and 21st (p. 809), 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The New General Hospital, Calcutta.—Bombay City and the Recent Census.—Mr. Neild Cook's Deputy.—The Indian Medical Service.—Vaccination and Small-pox in Bengal.—The Standard of a Well-filtered Water.—Regimental Cooks.

AFTER considerable delay the new block of the Presidency General Hospital was formally opened by the Lieutenant-Governor on August 31st. It is a plain building outside but replete with every convenience within. Great care has evidently been bestowed upon its construction which is up-to-date in every particular. There are three storeys identical in their construction and arrangement and each storey has two large open wards with service rooms and offices adjacent, while between the wards in the centre of the building are groups of rooms for private patients, sisters, resident officers, &c. Altogether it will provide accommodation for about 160 patients. There is an excellent verandah for each storey and the roof has been arranged to form a magnificent promenade. The operation-room over the portico facing the north is particularly good and has been fitted up on the latest scientific principles. Electric fans, lights, lift, and water pumps constitute the excellent electrical installation. The kitchen and the nurses' quarters are in separate detached buildings. One oversight has certainly been made, but there is still time to remedy it. A large dirty pond is situated close to the front of the building and within the grounds. Surely this should be filled up, as it is of no use, but may be a positive danger to the inmates.

The returns of plague mortality from various places continue to show large increases. In Mysore, Bombay city, and Karachi the disease is active. At Bombay the Governor has published some interesting figures to explain the decline of population shown by the census. He calculates the excessive mortality of Bombay during recent years at 115,000. The census being taken during the height of the outbreak it is estimated that 36,000 residents were living outside the island and that perhaps as many more had gone further afield. The most densely peopled parts of the city show 598 persons to the acre as against 282 in the thickest part of Calcutta. It has been discovered by the census that there

are no less than 53 dialects spoken in the city, and that only about a fourth of its total population were born in it. Two houses were found to contain 691 and 663 inmates respectively and the most crowded room had 54 occupants!

During the absence on privilege leave of Mr. J. Nield Cook the Corporation of Calcutta have asked for the services of Dr. T. F. Pearse, one of the plague officers. There being little plague in Calcutta at the present time work in this department must be reduced to a minimum. Dr. Pearse should be well qualified for the post as he holds high diplomas in medicine, surgery, and public health.

It is understood that the Secretary of State for India has sanctioned the strengthening of the Indian Medical Service by the addition of 26 officers and that the Government of India will shortly announce their intentions as to recruitment.

A resolution of the Government on vaccination in Bengal has just been issued. Small-pox was very rife during the past year and in some of the districts only a small proportion of the population has been protected by vaccination. The Lieutenant-Governor refers particularly to the insufficient protection afforded by the arrangements in Calcutta, but finds evidence of real progress in other towns where vaccination is compulsory. The difficulty in Calcutta is the large immigrant population. In the outlying districts the proportion of protected persons is very small. The total number of deaths from small-pox in Bengal was 25,302, against 14,514 in the preceding year. Out of 476 persons admitted into the Campbell Hospital in Calcutta only 124 had been vaccinated. It must be admitted that the obstacles to extensive vaccination are enormous.

Mr. Hankin in his report to the Government of the North-West Provinces lays it down that a public water-supply may be considered "well filtered" if it contains less than 100 microbes per cubic centimetre. This is a somewhat lower standard than that of some authorities, but according to it the municipal water-supplies in the North-West Provinces are shown to have been "well filtered."

The experimental scheme under which British troops in India are to do their own cooking is a matter of the highest importance. When soldiers are in the plains during the hot weather there may be difficulties, but during the cool season and when in the hills there is no reason why the cook-boy should not be abolished. The experiment was tried a few years ago with the Gordon Highlanders and for months together not a single case of enteric fever occurred. I understand that men trained in England are to be eventually attached to regiments in India. It is not sufficiently recognised that though the native can cook he is a very dangerous cook. He will keep dirty pots and pans, foul water, and fouler dishcloths, and he has not the remotest idea of sanitary precautions. The cooking must, of course, be well done or there will be other troubles. It behoves the authorities, therefore, to supply the trained men without delay or the substitution of the soldier-cook for the native one may in the meantime prove disastrous to the proposed change.

Sept. 7th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Houses and Health.

IN the present day we are met with many schemes for the development of ideal modes of dealing with the various influences which retard our physical and moral progress. One or two enthusiasts full of abstract notions of virtue and philanthropy combine with some followers to form an association, an attractive title is assumed, and the propaganda go forth. In many instances the objects set out are laudable and praiseworthy; in the majority there is an unbiased desire to benefit the human race; but there is generally a vast difference exhibited between what is theoretically advanced and what is practically possible. An instance of this kind is displayed in the Garden City Association which has recently held its conference in Birmingham. The present conditions of life in cities were pointed out as likely to reach a point in which the race would become degenerate, when we should be no longer able to hold our own. The advantages of a garden city were explained to be increased light and space, cheapness of land, readiness of market, facilities in getting to and from work, and all the attractions of a country life. We are all aware that the unfavourable conditions of life in crowded cities must be detrimental to health, and we view the slums of such localities with abhorrence and dismay. But the plan of reformation is not so easy as the promoters of the Garden City Association would wish. The minor industries of agriculture and gardening may possibly be fostered by such benevolent advocates; but the greater manufactories of towns must be located for the present, we fear, in confined areas. Though in some instances the managers of large industries have taken their works outside the city and have thus brought comfort to their operatives, it is somewhat utopian to expect that this course can be pursued on a scale sufficient to meet the demands of the ever-increasing growth of the population. The sacrifice of commercial interests entailed is too heavy.

Epidemic of Scarlet Fever.

The Health Committee have to face an increase in the cases of scarlet fever. At this season the type of cases is mild and the mortality in proportion to the number has been low. Still, the increase in the numbers admitted into the infectious hospitals is great enough to give apprehensions as to the accommodation at the disposal of the committee. Thus last week there were 471 patients in the scarlet fever hospital, as compared with 324 in the corresponding week of last year, and the record shows an earlier time of the increase for the season. Arrangements are being made to provide extra room for any additions, and there is every reason to believe that due preparations will meet any emergency. Cases of typhoid fever form a large item in the work of the Health Committee. 28 cases were reported last week, with 60 cases already in the hospital. A large number of these cases are also treated at the General Hospital and the Queen's Hospital, where it is considered by some unwise to admit such patients. Certainly disasters at times occur among those who attend to them, in spite of all precautions and care.

Poisons in Medicine Bottles.

A lamentable instance of death lately occurred from the want of some distinctive mark between bottles containing poison and those containing medicine. A man, aged 39 years, complained of having a cold and remained in bed. The medical attendant prescribed two draughts in small bottles, one to be taken at night and one in the morning; a small bottle of carbolic acid was also bought at a dispensing chemist's for inhaling. It was supplied in a bottle almost identical with the others, but labeled "Poison" in red. The bottles were placed on a tray by the servant and were carried upstairs. The night draught was given as directed. In the morning the wife of the patient administered, as she thought, the second draught, but immediately it was swallowed the patient became aware that the wrong bottle had been emptied and he died in 20 minutes. Many plans have been proposed for avoiding such mistakes. The most feasible would be, it seems to me, that all poisons should be sold in screw-stoppered bottles, which would thereby attract attention to the contents, though this would not be infallible unless other medicine bottles were universally precluded from having this form of stopper. Nothing, as a matter of fact, can supply the want of thought and care which should be associated with the function of nursing the sick.

Vaccination Exemption Certificates.

At a meeting of the West Bromwich Board of Guardians attention was recently drawn to the excessive fees which were charged for vaccination exemption certificates. It was stated that in many instances not only did the fathers lose a day's work in attending before the justices but were charged 3*s.* or 5*s.* for the certificates. The chairman pointed out that the guardians had no jurisdiction in the matter and ruled any discussion on the subject out of order. A notice to move a resolution another time was carried.

Sept. 24th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Blind of Manchester and Salford.

HENSHAW'S Blind Asylum has long been known beyond the limits of Manchester and Salford as an institution that has deserved well of the community, but for some time it has had its critics, which, perhaps, is not to be wondered at, for the old ways of an institution tend to become stereotyped

while those outside it look for progress. Moreover, it cannot cover the whole ground. There are in the two towns which, *pace* Salford, may for the nonce be called Manchester, some 500 poor blind people who, with a few exceptions, receive no help from the charity. The first article of its regulations is as follows: "To afford an asylum for the impotent and aged blind, and to maintain and afford such instruction to the indigent blind of both sexes capable of employment as will enable them to provide, either wholly or in part, for their own subsistence, and to promote the employment of, or to employ, blind persons." This comprehensive scheme, however, is not carried out, partly, perhaps, because it is so large, and partly from lack of funds, and the central institution has become the chief care of the managers. The asylum itself gives a good elementary education and boards 90 blind children, it trains some 50 men to trades, and it houses and feeds 50 old men and women. To make it possible for much more than this to be done there must be more and larger subscriptions. It is said that "the public gives its support spasmodically," and that the strictest economy has to be exercised, so that "with the present income it would be hazardous to undertake additional responsibilities." Even now, however, something is done for the blind outside the walls of the asylum. There are workshops in Deansgate with a shop for the sale of work at which 50 blind persons earn small wages. They were built at a cost of £11,000 which was provided by a comparatively small number of persons, and they are carried on unfortunately at an annual loss to the asylum of £700. Pensions also are given "to 112 persons at a cost of £800 a year, they have occasionally made loans or gifts of money to start the blind in business, and they have paid the fees of old pupils at the asylum who have proceeded to colleges," but the institution has failed in the "after care" of those whom it has trained and sent out into the world, and without this the majority are apt to drift into beggary and street-organ playing. There is room, therefore, for a society to do the work which the asylum cannot do, to help the outsiders, and one, indeed, has been at work for about 18 months, mainly through the initiative of a lady, Miss Isabel M. Heywood, who for some years has been accustomed to read to the blind workers in the Deansgate workshops during the dinner-hour. She wrote, with the help of a few friends, to the clergy and ministers and other workers among the poor, and by their aid obtained a pretty correct register of the poor blind. The Manchester and Salford Blind Aid Society was formed, with Sir William Houldsworth, M.P., as president. One of the first steps taken was to appoint two blind visitors to the blind, who will talk to them more freely of their circumstances and needs than to "sighted" people. The society has also a sick and benefit branch, a home of rest at St. Anne's-on-the-Sea, a home for blind women in Salford, a visiting branch with about 50 visitors in all parts of the district, and a Braille library. They have also two or three rooms in the old Eye Hospital where the blind go to read their Braille or Moon books, and where they have occasionally tea and music, and once a week a religious service. Sometimes there are 60 or 70 at the "socials," and there was a blind picnic recently, at which the Bishop of Manchester spoke, which was attended by 350 persons. The object of the society is as far as possible to help the blind to help themselves and to be self-supporting. There are among them organists, pianoforte players and tuners, wood-choppers, knitters, Braille writers, tea-agents, &c., and as far as possible help is given in the way of finding work and situations. Both the old asylum at Old Trafford and the Blind Aid Society are worthy of help, though the former has not escaped censure. Archdeacon Wilson seems to consider it a long way from being in the front line of the "centres of blind instruction" and that no real advance will be made without "a strong and entirely independent commission, including some experts in the training and care of the adult blind, with power to report on the whole scope and results of their work and its cost and to make recommendations." If such a commission will bring new life to this old charity it should be appointed without delay. The critics who only criticise and give no help in setting things right are of no great value.

Prison v. Workhouse.

Much discussion is going on as to the treatment of pauper children, and there seems to be a strong feeling in favour of their being saved from the contamination of the workhouse. *Apropos* of the Youthful Offenders Act, relating to children whom the magistrates remanded to the workhouse pending their trial, Mr. Scott, master of the Carlisle Workhouse, said that it would be much better for them to be remanded to the prison than to the workhouse. The clerk to the guardians said that a slur was cast on them by being in prison, even though they might be proved to be innocent, but the master repeated that they had better be sent to gaol, as in the workhouse "they were bound to associate with some inmates, regular old criminals," and would be less likely to receive contamination in gaol. This is a strong argument in favour of cottage homes or of boarding out.

More Males than Females.

The census returns for the Northwich Urban District have brought out the fact that the number of the male population was 9015, while that of the females was 8596. This is accounted for "by lack of opportunities for female labour." The same preponderance of males exists also at Crewe and for similar reasons—a state of things quite opposed to that of the country generally, where as a rule the female population is in excess.

Parks and Recreation Grounds.

Though the Manchester parks do not force themselves on the attention of the casual visitor, who may come and go without being aware of their existence, a good deal has been done, especially of late years, towards providing breathing spaces, or lungs, as they are called, for the ever-increasing population. Indeed, it is only in comparatively recent days that the corporation have risen to the idea that they had any duties or responsibilities in the matter, and many valuable opportunities of acquiring open spaces have been lost. However, since 1846 the capital sum spent on this object has been £445,127. The area of the various sites acquired, some large, some small, some by purchase and others by private beneficence, is over 411 acres, and with the cemeteries it amounts to 632 acres. This is exclusive of Heaton Park which the City Council recently decided to purchase. Its area, together with that of some adjacent land to be included in the purchase, will not be far short of 700 acres.

Sept. 24th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Gothenburg System at Barry.

THE progressive town of Barry, the population of which has increased from 165 in 1881 to 27,028 in 1901, is quite keeping up its reputation by providing the first licensed house in South Wales to be conducted on the lines of the Gothenburg system. On Sept. 19th the Barry licensing justices granted a licence to the representative of a limited liability company who are the owners of a recently erected hotel. The articles of association of the company provide that the shareholders shall not receive a dividend of more than 6 per cent. The remaining profits are to be divided among certain objects in the county of Glamorgan to be selected by the Lord Lieutenant. In the event of the sale of the licence the whole of the profits resulting from such sale are to be divided as the Lord Lieutenant may direct. Contributions may be made to the Cardiff Infirmary and to the Barry or other nursing associations, and there may also be provided by the company, or contributions may be made towards the provision of, a reading-room, an institute, a public library, a gymnasium, a public hall, or swimming baths in any part of Glamorgan. If this venture is successful there is no doubt that it will be followed by others in the colliery districts where the licensing justices grant fresh licences every year.

Poor-law Conferences.

Two conferences of Welsh Poor-law union representatives were held on Sept. 18th. Delegates from the unions of North Wales met at Rhyl and from the unions of South Wales at Langland Bay. The Rhyl meeting was addressed by Dr. J. Lloyd Roberts upon the Housing of the Poor as it affected Pauperism. Dr. Roberts urged that county councils should be asked to include classes relating to domestic matters in their technical instruction schemes. At Langland Bay the question of out-door relief was discussed, when it was suggested that a series of questions should be put to

applicants for relief as to their past careers and opportunities for thrift, and that the industrious and unfortunate should be relieved in preference to the idle and thriftless. Sir John Llewellyn stated that in Swansea a man who had been a member of a friendly society was always looked upon as a worthy applicant. Miss C. M. Williams read a paper upon Some Aspects of Hospital Management, in which she spoke strongly of the necessity for employing paid labour and of the unsatisfactory results attending the employment of patients as nurses, especially upon the male side. She considered that the difficulty which many of the smaller unions found in obtaining and keeping nurses was due to the absence of any organised system of promotion and to the objection which many nurses had to being regarded as Poor-law officers.

Conference on Tuberculosis at Cardiff.

The Mayor of Cardiff has issued invitations to a public conference to be held at Cardiff on Oct. 3rd to consider the propriety of establishing a South Wales and Monmouthshire Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. The response to the invitation by sanitary authorities and others has been very large and it is anticipated that the conference will be a successful one. At a meeting of the Swansea Corporation held on Sept. 18th a report from the Sanitary Committee was accepted in which the opinion was expressed that it was very desirable that a sanatorium for the treatment of patients suffering from phthisis should be established in South Wales.

Accident Hospital for Ebbw Vale.

A small accident hospital for the workmen employed at the Ebbw Vale collieries was formally opened on Sept. 21st by Mrs. Gordon-Canning, one of the ground landowners of the colliery. There is accommodation in the hospital for 10 patients in three wards. The kitchens and wards are on the first floor, and on the ground floor are the matron's rooms, a convalescent room, a receiving room, and an operating theatre, this last having smooth cement walls and a floor of terrazzo. The building and furnishing cost £3050. The greater portion of this sum was contributed from the workmen's medical fund which has about 7000 members. The workmen have consented to the deduction of a halfpenny in the pound from their wages in support of the institution.

Isolation Hospital at Ogmore.

The Ogmore and Garw Urban District Council have decided to erect an isolation hospital with accommodation for 12 patients upon half an acre of land situated near Brynmenyn at an estimated cost of £6000. The district is growing rapidly owing to the extensive mining operations. The population, which in 1881 was 6893 and in 1891 was 13,800, had increased at the last census to 19,912.

Hospital Saturday at Swindon.

As a result of the recent Hospital Saturday collections the sum of £130 has been handed over to the Swindon Victoria Hospital. Since 1885 sums amounting to £1373 have been forwarded to the hospital authorities, the average for the past five years being £111.

Vaccination Grant.

Mr. J. Dibble Staple, M.R.C.S. Eng., L.S.A., public vaccinator for the Ashley district of the Bristol union, has for the second consecutive time been awarded a Local Government Board grant for successful vaccination.

Sept. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

New Parish Hospital, Glasgow.

THE memorial stone of the new general hospital which is being erected at Stobhill by the Glasgow Parish Council was laid on Sept. 16th by the Right Honourable Lord Balfour of Burleigh, K.T., Secretary for Scotland. The hospital covers 53 acres, will provide accommodation for 1500 patients and 150 nurses and other members of the staff, and its estimated cost is £200,000. It stands on an admirable site, 350 feet above the sea-level, and commands a fine view of the open country. The buildings are to be constructed according to the most modern plans and the equipment is to be in every sense complete. The institution is intended as a general hospital and infirmary for aged and infirm persons, and also for phthisical cases. On a separate part of the ground provision is being made for the reception of 400 children, the greater number of whom are ultimately to be boarded out—that is, as soon as opportunities for doing this can be secured. The parish council has, in addition, undertaken to erect two other hospitals, one at the west end and the other at the east end of the city; these are to be fitted up entirely for acute curable cases. In this way it is intended, by separate classification, to surmount some of the difficulties and objections which at present exist in the treatment of those who become chargeable to the public rates. The new hospitals will allow the old buildings to be used solely for those among the applicants for indoor relief who are fitted to perform a greater or less amount of manual labour. Lord Balfour spoke in appreciative terms of the policy of the Glasgow Parish Council and stated that it had the most cordial approval of the Local Government Board for Scotland. He considered that the administration of the Poor-law, though not absolutely beyond reproach, was such as to secure for the majority of those who deserved it the greatest possible consideration. Speeches were also delivered by the Lord Provost of Glasgow and by Mr. Brand, the chairman of the council. The latter argued that power should be given to the parish councils to deal with incorrigible drunkards. Numbers of these were continually entering and leaving the poorhouse, and if they could only be detained a serious, and he believed a successful, attempt at their reform could be made.

British Association at Glasgow.

The sectional meetings of the British Association were brought to a close on Sept. 19th. Several of the papers read during the week were of unusual interest. Major Ronald Ross, in dealing with the subject of malaria, described the part played by the mosquito in the dissemination of the disease and expressed the opinion that by the extinction of the mosquito every town in the tropics in the course of a few years would be freed from the malarial poison. All that was necessary was to clear away every drop of stagnant water through the town by a means of a gang of men maintained for the purpose by the local municipality. Major Ross described the experiments now being carried on in Sierra Leone by the Liverpool School of Tropical Medicine assisted with a sum of £2000 subscribed by a west of Scotland gentleman. The experiments have been in progress for two or three months and have already produced an obvious reduction in the number of mosquitoes. In the Zoological Section also Dr. Rankin of Glasgow University announced that arrangements had been made at the Millport Marine Biological Station for the erection of a research laboratory and also of a private boarding-house. The site for the new buildings has been promised by the Marquis of Bute, and a gentleman who prefers to remain anonymous has given £3000 towards their erection. In the same section an exhibit which attracted much interest was that of three hybrid zebras which were shown by Professor Cossar Ewart. The animals, which were very graceful and were much admired, were seen quietly grazing in the University quadrangle. One of them was described as reproducing "fairly accurately the colouration of the primeval common ancestor of the horse and the zebra." One use to which it is suggested these animals may be put is in connexion with mountain batteries. A discussion in the Economical Section on the Housing Problem excited much interest. It was introduced by Professor Smart, LL.D., and in the course of it the Lord Provost offered an eloquent defence of the policy of the City Improvement Trust. The Association next year is to meet at Belfast.

Bequests to Glasgow Hospitals.

The trustees under the will of the late Mrs. James Rodger, Glasgow, have intimated the following legacies: to the Glasgow Royal Infirmary, £3000; to the Western Infirmary, £1500; to the Victoria Infirmary, £1000; and to Quarrier's Orphan Homes, £1500. A further sum of £1000 is distributed among the special hospitals and other charitable associations. It should be mentioned that Mrs. Rodger in 1891 divided £10,000 among the Glasgow hospitals and benevolent societies and that in 1893 she made a similar distribution of £3000.—The late Mr. James McWilliam, Glasgow, has left a sum of £500 each to the Royal Infirmary, the Western Infirmary, and the Victoria Infirmary.

Glasgow University.

Mr. Alex. Galt, D.Sc., who was for several years official

assistant to Lord Kelvin in the University, has been selected by Lord Balfour of Burleigh for appointment to the technological department in the Edinburgh Museum of Science and Art. This is a new appointment having for its object the development of science and art in their relations to technical education.

Sept. 24th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Typhoid Fever at the Richmond Asylum.

AT the meeting of the Committee of Management of the Richmond District Lunatic Asylum held on Sept. 19th the medical officer (Mr. Conolly Norman) submitted a special report on the occurrence of typhoid fever in the asylum last autumn and its recurrence recently. Last year the infection broke out in the month of August and attacked only the female department, the nurses being the first to suffer and subsequently the patients. There were 54 cases altogether and seven deaths. The observations of the medical staff led them to the conclusion that the method of inoculation with anti-typhoid vaccine, which was energetically carried out, prevented a much larger spread of the disease. In the month of August of the present year typhoid fever again appeared in the female asylum. One nurse and four patients were attacked. Last year Sir Charles Cameron reported on the matter and drew attention to some defects in the sanitary arrangements which were at once set right. The medical superintendent states his own opinion that the occurrence of typhoid fever was due to the condition of the underground drain which runs partly under the main female house and which has long ago been looked upon as a source of danger to the institution. The committee unanimously resolved to refer the matter to the city engineer.

The Royal Commission on University Education.

The Royal Commission on University Education had their first sitting in the Royal University Buildings, Earlsfort-terrace, Dublin, on Sept. 19th, the Right Hon. Lord Robertson, the chairman, presiding. To the surprise of everyone when the press representatives appeared they were informed that the Commissioners had decided to conduct the proceedings in private and that they would not be admitted at any time, but that the secretary would see that official reports were published. This decision, though it may follow the precedents of other Royal Commissions, has given the greatest offence and is really an error in tactics. When a Commission, about the mode of appointment and *personnel* of which there has already been so much discussion, decides that its proceedings shall be held *in camerâ* it is not to be wondered at that from all the Irish newspaper press, representing every shade of thought and political opinion on this most difficult subject, there is for once a unanimous protest. The evidence of the secretaries of the University, Bishop O'Dwyer of Limerick, the President of Queen's College, Belfast, and the President of University College, Dublin, has been taken.

Hospital Saturday in Carrickfergus.

The Saturday collection for the Royal Victoria Hospital, Belfast, was taken up in Carrickfergus (the old county town of Antrim) on Sept. 21st, when upwards of £28 was the result, an increase of £6 over the total of the previous year.

The Forster Green Hospital, Belfast.

At a meeting of the General Committee and friends of the Forster Green Hospital for Consumption and Diseases of the Chest, held at that institution on Sept. 21st, the secretary reported that on Jan. 1st 23 patients were in hospital. 105 have since been admitted, making a total of 128 cases treated during the current year. The average number of patients in hospital at one time has risen from 24 in 1900 to 29 this year. A total of 34 beds will by certain rearrangements be soon available, a supply very inadequate to cope with the enormous number of persons affected in this district with tuberculous disease. The public are specially appealed to for help, as between the present time and the end of the year £1162 are needed without going into debt. The open-air treatment is being thoroughly carried out at this hospital and ample confirmation (medical and lay) was given at the meeting as to the success of this modern treatment.

The Outbreak of Typhoid Fever in Belfast.

There is practically no change yet in the outbreak of typhoid fever, and at present, in addition to a very large number of cases of that disease, there are 23 cases of diphtheria, an altogether unprecedented epidemic of that zymotic. The weather at present is very wet and the temperature keeps high, a sort of English "monsoon," and with just the conditions suitable for bacterial growth. At the last meeting of the Public Health Committee attention was drawn to the practice which some medical men, it is reported, have of holding over notifications of cases of infectious disease till they have several to notify at once. It is probable that the medical men would reply that until they are quite sure it is wiser to wait. At a previous meeting of the Public Health Committee fault was found with medical men for reporting cases that were not typhoid fever as that disease, but the statistics of the union fever hospital show that cases of mistaken diagnosis (that is, cases sent in as typhoid fever which turn out not to be so) are fewer than those recorded in the metropolitan fever hospitals. This sort of criticism does not meet the real facts, which are that in a comparatively new city like Belfast typhoid fever—a preventable disease—is never absent and at times, as at present, assumes a serious epidemic form. The duty of the Public Health Committee is to find out first what is the cause of this most discreditable state of affairs, and secondly, to put an end to it. A number of years ago the corporation, seeing that the fire brigade was in an inefficient condition, reorganised it, so that now people from all parts come to see it. At present they are making most advanced and elaborate arrangements for technical education. Why do they not reorganise their Public Health Department and bring it up to modern requirements? Until this is done there is little hope for improvement in city hygiene and sanitation in Belfast.

The Local Government Board of Ireland.

The constant quarrelling between the Local Government Board and the various local authorities in Ireland is deplorable. Quite recently the Board issued a sealed order directing the Downpatrick Board of Guardians to appoint a midwife in the Strangford District, but on Sept. 21st it was resolved by 17 votes to 2 to test the validity of this order in the law-courts, and the solicitor of the guardians was ordered to employ counsel to apply for a writ of certiorari in the King's Bench. Then there is a standing dispute between the Belfast Board of Guardians and the Local Government Board as to the expenditure of a sum of money in the building of a new board-room. The Local Government Board refuse so far to sanction this—and they are quite right, as there are lots of more pressing needs, such as the building of a new nurses' home; but still the question arises, as the chairman put it, Are the affairs of the Belfast Union to be managed by the representatives of the people or by the Local Government Board? Constant wrangling is taking place all over Ireland in reference to the nursing regulations issued by the Local Government Board. Either there is great difficulty in interpreting the Irish Local Government Act or the Central Board in Dublin is not well advised and is weak.

Sept. 24th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Scientific Pleasure Party in Quarantine.

THE members taking part in the scientific pleasure cruise annually organised by the *Revue Internationale des Sciences*, under the direction of Dr. Olivier, have met with a singular adventure. The cruise is organised year by year and various scientific men go together with ordinary tourists upon a geographical and scientific tour which is naturally of much more interest and value than one which is accompanied by ordinary guides. One year, for instance, Norway and the whale fisheries will be visited, another year Algeria, while this year the steamer *Senegal* took a Mediterranean cruise, visiting Italy, Sicily, Greece, and Syria. On returning to Marseilles two cases of suspected plague occurred on board. Pratique was refused and the ship was detained in quarantine at Frioul for 10 days. One of the cases ended fatally while the other patient recovered and no other cases appeared. The passengers, among whom were a large proportion of medical men, accepted their detention philosophically enough, and it is to be hoped that their discomfort will not be without results, for any remarks or criticisms which they may have to offer will have a greater chance of

being attended to than if they were only ordinary travellers. Among the passengers were Dr. de Valcourt, Dr. Charles Leroux, Dr. Bucquoy, a member of the Academy of Medicine, Dr. Masbrenier, Dr. Lacambre, Dr. de Zvan, Dr. Hirschfeld, Dr. Fayard, Dr. Olivier, and M. Raymond Poincarré, formerly a Minister, and others.

The Paris Hospital Attendants.

The Paris hospital attendants, both male and female, have recently held an important meeting. They demand immediate permission to form a union, a permission which is refused by the Prefect of Police on the ground that no class of municipal servants is allowed to form a union. They also demand that instead of being boarded and lodged as they are they shall be allowed to keep their present salary and be free to board and lodge themselves how and where they please at their own expense. One result of this reform will be that their retiring allowance, which as matters stand at present is calculated upon the amount of their salary, due deduction being made for the cost of their board and lodging, would in future be calculated upon the whole of their salary without deduction. Finally, they ask for the formation of a nursing school and also that they shall be paid during their eight days' annual holiday as well as during their two periods of military service which last for 28 and 13 days respectively. The president of the meeting was M. Artreux, a *surveillant*, assisted by M. Malbos and M. Iger, *infirmiers*. These gentlemen, together with M. L'Héritier, spoke and laid the claims of their class before the meeting. The following resolution was carried unanimously:—

The hospital attendants, both female and male, in this meeting, held on Sept. 7th, 1901, in the great hall of the Labour Exchange, beg to thank the Trades Committee for the efforts made on their behalf. The members invite all absent friends to join together with themselves in endeavouring to bring about as soon as possible the realisation of their just claims.

September Congresses.

Two important congresses have been held this month. That of the French Association for the Advancement of Science was held last week at Ajaccio, under the presidency of Dr. Hamy, a member of the Institute. The members had a great reception and the Mayor, M. Bodoy, in his speech expressed the hope that the important discussions upon climatology which formed part of the proceedings of the congress would result in great advantages for the town of Ajaccio and of Corsica in general, a country which had many sites eminently adapted for sanatoria, but one also where drainage of the marshlands was necessary for making the land really healthy. At Nantes on Sept. 23rd the Congress of Gynæcology, Obstetrics, and Pediatrics was opened. An interesting excursion had been organised for the members to the seamen's hospital of Croisic at Pen Bron. During the congress a monument was unveiled to the memory of two famous surgeons, Chassaignac and Maisonneuve, Professor Guyon being president of the proceedings.

Sept. 24th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Operative Results in Panophthalmia.

DR. C. BAUER, late assistant at the Zürich Ophthalmological Clinique under Professor Haab, has just published a report on the results of enucleation in cases of panophthalmia. As Professor Pflüger does not consider this operation justified, but wishes it replaced by the "exenteratio bulbi" (Paris Congress, 1900), it is desirable that all ophthalmological cliniques should report their results. Dr. Bauer writes on 53 cases which were operated on in the Zürich Ophthalmological Hospital from 1886 to 1900—viz., 45 men and eight women—the ages varying from 16 to 75 years. The origin of the panophthalmia was generally traumatic. The operations took place from three to 20 days after the injury (the average being seven days) and all the patients could be dismissed in from four to 14 days after the successful operation, the average date of dismissal being eight days after the operation. The report includes only very distinct cases of panophthalmia, an acute, purulent uveitis combined with severe inflammation of the surrounding tissues with swelling of the eyelids, protrusion and impeded motility of the bulbus oculi.[1] Bonnet's operation was always performed. The original chloroform narcosis has been supplanted by ether narcosis following an injection of morphine, this proving especially suitable in alcoholic patients. These 53 cases form 16 per cent., or about the usual average, of all the 320 cases of removal of the bulbus oculi which have been performed at the hospital during the past 15 years.

[1] Haab's Atlas, Tab. 27 and Tab. 356.

Gangrene of the Lower Extremity after Parturition.

Dr. E. Wormser reports one more of these very rare cases which he has observed at the Basle Lying-in Hospital; there are only about 20 such cases on record. A woman, aged 36 years, was suffering from purulent bursitis near the knee-joint when her sixth confinement came on. Notwithstanding every precaution—the abscess having been opened previously—the patient was feverish and on the twelfth day after the confinement she developed gangrene of the left foot and died three days later. The infection proved to be due to streptococci, and three injections of anti-streptococcic serum proved of no avail. As in some other similar cases, the relatives made legal claims against the medical attendant for mismanagement of the case, but the claims were not allowed.

Obituary.

I regret to report the death of two Zürich medical men. Dr. Hans von Wyss, who has many connexions in England, succumbed to apoplexy at the early age of 55 years; he was Professor of Legal Medicine and the author of a book on the subject. He had been a member of the sanitary council (*Sanitätsrath*) for many years. Dr. Max Freudweiler also died suddenly, a very promising young man, aged 30 years, and lecturer (*privat-docent*) on Hydrotherapy at the Zürich University.

Zürich, Sept. 23rd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Canadian Medical Association.

THE thirty-fourth annual meeting of this association was held at Winnipeg, in the province of Manitoba, on August 28th, 29th, and 31st. Although Winnipeg is situated some 1300 miles from the leading centres of medical thought in Canada the attendance, which reached over 175 members from all parts of the Dominion, was greater, with one exception, than that of any meeting and was pronounced the best in every respect since the Association was organised in 1867. Every province in the Dominion was represented, with the single exception of Prince Edward Island, one delegate travelling 3000 miles to attend the meeting; and there were several visiting physicians from the United States. The social functions have never been surpassed; the special excursion through the great wheat belt of Manitoba offered to the members of the Association by the Canadian Pacific Railway was a trip thoroughly enjoyed by all and not soon to be forgotten. Dr. H. H. Chown of Winnipeg was the president, while Dr. F. N. G. Starr of Toronto discharged the duties of secretary. One of the oldest practitioners in the West, Dr. J. H. O'Donnell of Winnipeg, delivered the address of welcome and gave the history of the growth of the medical profession in that section of the Dominion from 1869 onwards—a time when Winnipeg was only an outpost of civilisation. The question of the formation of a Medical Defence Union was presented by Dr. Russell Thomas of Lennoxville, Quebec, who was delegated by the St. Francis District Association of that province to hand over to the Canadian Medical Association a scheme of medical defence which was already in operation in the eastern townships. The Canadian Medical Association unanimously adopted this scheme and forthwith organised a Medical Protective Union or Physicians' Protective Union, with its headquarters at the capital, Ottawa, and with Dr. R. W. Powell as president, Dr. McKinnon as secretary, and Dr. James Grant, jun., as treasurer, all being well-known practitioners.

A very able Presidential Address was delivered by Dr. Chown who made some interesting references to the future of the city of Winnipeg and the Province of Manitoba. Although less than 10 per cent. of the arable land of the province was under cultivation, the farmers of Manitoba would this year have a crop estimated at 85,000,000 bushels of grain. He referred to the water-supply and the sewerage system of Winnipeg, which with a population of 45,000 got its water

from an artesian well 17 feet in diameter and 48 feet deep, and although they had been pumping for months a supply of from 2,000,000 to 3,000,000 gallons per day there was not the slightest evidence of any diminution of the amount flowing in. The well was supposed to tap an underground passage which ran from Lake Manitoba, and as this lake was 130 miles long the supply was inexhaustible. Speaking of the question of tuberculosis he instanced cases of young farmers free from tuberculous taint living in newly-built houses, harbouring no bacilli, and separated by long distances from their neighbours, in whom tuberculosis constantly made its appearance. If heredity, house infection, and contagion could thus be eliminated how was it possible to account for the origin of these outbreaks?

The Address in Medicine was delivered by Dr. J. R. Jones of Winnipeg who is associated with the Manitoba Medical College. He took for his subject "The Question of Medical Education." He thought that medical students generally entered upon the study of medicine poorly equipped in English and advocated a higher standard of medical matriculation. He was in favour of a Dominion Medical Board, so that anyone with the proper qualifications could be registered in every province of the Dominion. They should not only be Canadian, but Imperial, capable of registration in Great and Greater Britain. He would not eliminate Latin, but would go a step further and advocate a more general knowledge of Greek. The didactic-lecture was adversely criticised and clinical methods of teaching, particularly the "case" method of teaching, were upheld. Dominion registration was a question thoroughly debated and discussed and delegates from all the provinces assured Dr. Roddick of provincial support in this matter.—Dr. W. S. Muir of Truro, Nova Scotia, read a very interesting paper on Infectious Pneumonia, reporting four cases seen in one family at a time when there was no influenza in the district.

Epidemic Cerebro-spinal Meningitis was the subject of a paper delivered by Dr. James McKenty of Gretna, Manitoba, who gave the history of an epidemic occurring in North Dakota, U.S., during the winter and spring of 1893. It occurred within an area of 50 miles by 20 miles and about 70 persons were seriously ill, 25 cases ending fatally. Dr. McKenty gave notes of 22 out of 30 cases occurring in his practice; the average age was 17 years; the youngest was 15 months and the oldest was 38 years. The duration of the disease extended from 12 hours to 15 weeks.—Dr. A. J. Macdonnell of Winnipeg contributed a paper on Splenic Anæmia and reported a case.—Dr. J. N. Hutchison of Winnipeg read a paper on Physical Development in which he advocated periodical lectures, by duly qualified physicians, in the schools to separate classes of boys and girls on the subject of sex.—Dr. W. H. Pepler of Toronto reported several cases of rheumatism, eczema, and varicose ulcer of the legs treated by superheated dry air, recording excellent results.

Orthopædic Treatment of Deformities and Disabilities resulting from Diseases of the Nervous System, with special reference to Tendon Transposition, was the title of a paper contributed by Dr. B. E. McKenzie of Toronto.—Dr. G. A. Kennedy of McLeod, Alberta, presented a paper on Mild Small-pox which dealt with the recent outbreak of the disease in the North-west Territories. There had been 1500 cases and a noteworthy fact was that the greatest number of cases occurred among the French half-breeds who had never been vaccinated; and, further, Indians on reserves had not suffered to any great extent, as annual vaccination was the rule. Not one case was seen or heard of among the Galicians, Doukhobors, or Roumanians who had lately settled in the Canadian North-west, and this was due to the fact that compulsory vaccination was the rule in youth with these people, and then they had been revaccinated on their recent passage across the Atlantic and at Halifax. 13 deaths had occurred from the disease.—Dr. Montizambert, the Director-General of Public Health for the Dominion, in discussing this paper considered that it would be unfortunate if the impression went abroad that any doubt existed in the minds of the members of the Canadian Medical Association as to the true nature of the disease which had now been epidemic on the North American Continent for some years. He considered that the facts presented in Dr. Kennedy's paper relating to the Doukhobors and Galicians were the most valuable portion.—At the close of this discussion the following motion was unanimously adopted:—

That in view of the general prevalence of small-pox throughout this continent this Association desires to urge upon the profession and the public generally the necessity of vaccination and of revaccination.

A very interesting case was that recorded by Dr. J. F. W. Ross of Toronto of Chronic Ulceration of the Stomach simulating Cancerous Disease, in which the Operation of Gastro-enterostomy with the Murphy Button was Performed. This occurred in a young woman, aged 20 years, who had been reduced to 75 pounds in weight. At the operation a large growth was found at the pyloric end of the stomach. It was looked upon as a hopeless case and temporary relief was secured by gastro-enterostomy. The patient fully recovered from all her symptoms and 11 months after the operation she weighed 140 pounds and on examination of the abdomen no mass could be felt and the patient was not suffering from any gastric symptoms at all.—Some Forms of Hyperacidity and their Treatment was dealt with by Dr. C. F. Martin of Montreal in an interesting paper.—On the evening of the second day Dr. Thomas S. Cullen of Baltimore, U.S.A., read a very interesting and valuable communication on Cancer of the Uterus with lantern demonstrations; and following this was another demonstration on Skin Diseases conducted by Dr. Francis J. Shepherd of Montreal which was equally appreciated. Both these demonstrations will take rank as features of the Winnipeg meeting of the Canadian Medical Association.—The Varieties and Distribution of the Bacillus Diphtheriæ and their Clinical Significance was a subject handled by Dr. F. F. Westbrook of the University of Minnesota, U.S.A., and was primarily from a laboratory point of view.—Dr. H. A. Bruce of Toronto showed a Hairy Tumour which had been extracted from the stomach of a young married woman, aged 26 years. On opening the stomach the mass was found to be free in that organ, a portion extending through the pyloric end into the duodenum. It was about 24 inches in length, being about two inches in diameter at one end and gradually tapering to a point at the other. The colour of the tumour was uniform throughout and of the same colour as the hair on the patient's head. There were no evidences of hysteria in the patient and the surgeon did not offer any solution of the problem as to how the hair got there.—A case of Transplantation of the Ureter for the cure of Uretero-vaginal Fistula was reported by Dr. A. Lapthorn Smith of Montreal. The operation performed for the relief of the patient was one which Dr. Smith had seen Sänger perform at Leipsic three years ago. This was the first time that this operation had been done in Canada. Dr. Smith stated that not a drop of urine had passed through the fistula since. The patient had made an excellent recovery.—Dr. F. Buller of Montreal read an able paper on Syphilis as Seen by the Ophthalmic Surgeon. The largest share of the ophthalmologist's work in this connexion was with the tertiary period. He considered that the time at which the syphilitic lesion made its appearance was always a very important element in the diagnosis. In treating syphilis he did not believe in the protiodide of mercury, at least as ordinarily administered, and appeared to favour the inunction method of treatment with grey powder.—Dr. H. M. Bracken, the medical officer of health of Minnesota, U.S.A., contributed a paper on the Recent Outbreak of Small-pox in America. He traced the origin of the disease as regarded the State of Minnesota, where there had been a total of 9429 cases, the disease still existing and having many centres of infection in that State. He was of the opinion that small-pox was probably imported into the United States by Cuban refugees before war broke out between that country and Spain. Referring to the subject of vaccine, he said that it was frequently spoilt by not being kept in proper temperature, as it was frequently being shipped in cans which were too hot and then subsequently kept in warm offices. He said that the health commissioner of Minneapolis kept all his vaccine in an ice-box, but, of course, not frozen, and he always obtained good results. Replying to a question in regard to isolation Dr. Bracken favoured 18 days' quarantine.—The Necessity of a Recognition and Isolation of Trachomatous patients in Canada was the title of a paper prepared by Mr. W. Gordon M. Byers of Montreal and read in his absence by Dr. C. F. Martin of the same city. The writer believed that there were many unrecognised and untreated cases scattered here and there throughout the Dominion of Canada, especially in certain centres of the eastern counties of Ontario, some in Quebec, and others in Manitoba. Mr. Byers thought that the attention of the Dominion Government should be directed to the exclusion of immigrants afflicted with trachoma.—Dr. Montizambert stated that this question had been under consideration by the Government of Canada for some time.—The Treatment of Typhoid Fever

was dealt with by Dr. J. L. Bray of Chatham, Ontario, who now gave very little milk in feeding, but that little always peptonised. He believed in making the patient drink two or three quarts of pure water in the 24 hours. He sponged frequently with tepid water and thought that they got just as good results from tepid water as from sponging with very cold water or using the cold bath, and then it was not so distasteful to most patients. In hospital practice Dr. Bray used the electric fan after using the tepid water and he had found this plan very satisfactory, especially in young and sensitive children.

The Address in Surgery was delivered by Mr. O. M. Jones of Victoria, British Columbia, who was formerly an assistant of Mr. Treves. His address dealt mainly with Surgery of the Stomach, relating the deductions he had arrived at from his own experience of 26 cases. Gastro-enterostomy Mr. Jones considered the most important and most interesting part of the whole subject of surgery of the stomach. He said that nothing could be simpler than this operation performed with the Murphy button. He had used it in 14 cases and in only one case was there any trouble.—Dr. Henry Howitt of Guelph, Ontario, described a Surgical Procedure for the relief of Ovarian Pain which consisted in a number of cross-sections quickly made through the tense capsule of the ovary. Hæmorrhage and adhesions never gave any trouble.—Dr. Lapthorn Smith stated that he had never heard of this operation before and thought that it was original with Dr. Howitt.

On the last evening of the meeting a symposium on Tuberculosis was held which was opened by Professor Russell of the University of Wisconsin, U.S.A., who contributed a carefully prepared and exhaustive paper on Human and Bovine Tuberculosis and their Inter-relation. He considered his subject from the standpoint of animal industry and from that of public health.—Dr. A. J. Richer of Montreal dealt with the Sanatorium Treatment of Tuberculosis, a treatment made up of rest, outdoor life, over-feeding, and medical supervision, the latter being described as the keynote to success in phthisical treatment.—The Etiology and Early Diagnosis of Pulmonary Tuberculosis was the last paper read at the meeting and was contributed by Dr. Gilbert Gordon of Toronto. A very important discussion then ensued on this topic and a motion was unanimously adopted calling upon the Government of the Dominion of Canada to grant aid in the erection of sanatoria and also in the prevention and treatment of tuberculosis.

The city of Montreal was selected as the place of meeting in 1902 and a suggestion was left with the members of the Association that the meeting of 1903 should be held in the far-off province of British Columbia. The following were the officers elected for the ensuing year: President, Dr. Francis J. Shepherd of Montreal; treasurer, Dr. H. B. Small of Ottawa; and general secretary, Dr. George Elliott of Toronto.

Sept 17th.

Obituary.

WILLIAM LAKE ROBERTS, M.R.C.S. ENG., L.S.A.

MR. W. L. ROBERTS, senior honorary surgeon of the Bradford Royal Infirmary, died on Sept. 8th at his residence in Peel-square, Bradford. Mr. Roberts, who was in his fifty-sixth year, was a native of Alford, Lincolnshire, and went to Bradford almost 30 years ago. He received his medical education at King's College, London, and became qualified as M.R.C.S. Eng. and L.S.A. in 1868. Before going to Bradford he was for a short time assistant house surgeon at Stockport. He was house surgeon at the Bradford Infirmary for 10 years, and upon resigning the position in 1880 his portrait was painted by order of the House Committee and hung in the board-room. At that period he entered into partnership with the late Mr. Herbert Spencer, to whose practice he succeeded. He was not only a man of whom everybody spoke well, but one of whom everybody thought well. Handsome in person, his upright, well-knit figure and clear, honest blue eye were only the index of a loveable, honest, frank, and modest character. As a surgeon and practitioner he was cautious, conscientious, and able; as a friend he was always the same—cheerful, quiet, and true. He has left a widow and one daughter.

Such is the life that was cut short on the Sunday night of Sept. 8th, after a long and painful illness, borne with the greatest fortitude and during which he to the last showed the same consideration for others and the same gratitude for all services rendered to him that had characterised him through life.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In September the following candidates passed in the subjects indicated:—

Surgery—H. Richardson (Sections I. and II.), Leeds; and C. W. Rowntree (Sections I. and II.), Middlesex Hospital.
Medicine.—C. J. E. Edmonds (Sections I. and II.), St. Thomas's Hospital; R. L. Jones (Sections I. and II.), Middlesex Hospital; G. J. W. Keigwin (Section II.), London Hospital; C. A. Lower (Section I.), Guy's Hospital and Bristol; and C. W. Rowntree (Sections I. and II.), Middlesex Hospital.
Forensic Medicine.—C. J. E. Edmonds, St. Thomas's Hospital; R. L. Jones, Middlesex Hospital; O. Millauro, Westminster Hospital; C. W. Rowntree, Middlesex Hospital; and H. Smith, Birmingham.
Midwifery.—C. H. Allan, London Hospital; E. O. Libbey, Leeds; C. W. Rowntree, Middlesex Hospital; W. P. Taylor, Sheffield and Bristol; and J. H. Williams, London Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—

C. J. E. Edmonds, R. L. Jones, G. J. W. Keigwin, C. W. Rowntree, and H. Smith.

UNIVERSITY OF DURHAM.—In the Faculty of Medicine the following candidates have been successful in the following examinations for the degree of Bachelor in Medicine:—

FIRST EXAMINATION.

Old Regulations.

1. *Chemistry, with Chemical Physics.*—Babaji Sarvottam Mankar, L.S.A., London Hospital.

New Regulations.

1. *Elementary Anatomy and Biology, Chemistry and Physics.*—Second-class Honours: Reginald Inglis Douglas, St. Bartholomew's Hospital. Pass list: James Henry Cooke, B.Litt., William Cowden, Arthur Beresford Jones, William Ernest Craven Lunn, and Richard Geoffrey Shaw Simpson, College of Medicine, Newcastle-upon-Tyne.
2. *Chemistry and Physics.*—Reginal Bigg, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; John Bowman Cooke, College of Medicine, Newcastle-upon-Tyne; Saville James Fielding, St. Thomas's Hospital; Archibald Finlay, London Hospital; James Glenny Gibb, St. Bartholomew's Hospital; Raghunath Vithal Khedkar, Grant College, Bombay; Cyril Claude Lavington, Ernest Lacey Markham, and Francis Henry Moxon, College of Medicine, Newcastle-upon-Tyne; Roland Wilfred Pearson, M.R.C.S., L.R.C.P., Owens College, Manchester; Arthur John Turner, London Hospital; and Edward Tate and Tys Visser, College of Medicine, Newcastle-upon-Tyne.
3. *Elementary Anatomy and Biology.*—Hugh Boyd Cunningham, Samuel Leslie McBean, and John Charles Norman, College of Medicine, Newcastle-upon-Tyne.
4. *Elementary Anatomy.*—Thomas Henry Bishop, Edinburgh University.

SECOND EXAMINATION.

Old and New Regulations.

Anatomy, Physiology, and Materia Medica.—First-class Honours: John George Ogilby Hugh Lane, M.R.C.S., L.R.C.P., Guy's Hospital, and Thomas William Maddison, College of Medicine, Newcastle-upon-Tyne. Second-class Honours: George Errington Lloyd, College of Medicine, Newcastle-upon-Tyne. Pass List: John Arthur Bell, St. Bartholomew's Hospital; Llewelyn Alfred Henry Bulkeley, Arthur Budd, Henry Mounsey Braithwaite, and Herbert Christal, College of Medicine, Newcastle-upon-Tyne; Edgar Fletcher Edmunds, University College, Sheffield; Harold Edgar Featherstone, Arthur Henry Hogg, and Norman Haliburton Hume, College of Medicine, Newcastle-upon-Tyne; William Watkiss Jones, Birmingham University; Sophia Bangham Jackson, University College, Cardiff; Frederick William Kemp, College of Medicine, Newcastle-upon-Tyne; Aurelius Victor Maybury, Guy's Hospital; Colin Francis Frederick McDowall and Constance Charlotte Robertson, College of Medicine, Newcastle-upon-Tyne; Leslie Martin Rosten, St. Bartholomew's Hospital; Stanley Robson, William Edward Stevenson, and William Seymour, College of Medicine, Newcastle-upon-Tyne; Francis Rupert Snell, St. Thomas's Hospital; Arthur Lewin Sheppard, William Tait Sewell, Frederick James Strachan, and William Lister Tindle, College of Medicine, Newcastle-upon-Tyne; and Samuel George Webb, Birmingham University.

NEW OPEN SPACE FOR FULHAM.—The borough of Fulham is to be congratulated upon having secured another recreation-ground for the use of the inhabitants. The Southfield estate, close to Hurlingham Park, consisting of 22 acres, has been purchased at a cost of £1500 per acre. The total cost, including the laying-out of the grounds, &c., is estimated at £45,000, towards which the London County Council will contribute £30,000.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.—At the Bank of England £100 have been received from Sir Henry Irving and £50 from the Duke of Westminster for the Prince of Wales's Hospital Fund for London.—Among the latest contributions to the same Fund are the following:—Annual subscriptions—Mr. George Livesey, £25; Messrs. James Clarke and Co., proprietors of the *Christian World*, £21.

WELSH SEASIDE RESORTS.—At a recent meeting of the Merioneth County Council Dr. R. Jones, medical officer of health, reported that in the seaside towns of Carnarvonshire and Merionethshire the infant mortality was above the average and he thought that some of this might be due to the artificial feeding of infants whose mothers were engaged in the work of lodging-houses patronised by visitors. Dr. Jones also stated that the sleeping accommodation provided for domestic servants during the holiday season at Welsh seaside resorts was often very unsatisfactory. The council decided to send copies of the report to the educational and sanitary authorities of the county.

A DIFFICULTY UNDER THE NOTIFICATION ACT.—At Haverfordwest Police-court on Sept. 14th, Mr. T. Finney, a medical practitioner of Aberaman, was charged with aiding and abetting a man resident in Roch, near Haverfordwest, in exposing himself while suffering from scarlet fever on July 10th, 1901. The prosecution was conducted on behalf of the Haverfordwest Rural District Council. The evidence showed that on July 1st Mr. Finney saw the patient, who was suffering from a sore-throat and slight rash, and thinking it might be a case of scarlet fever notified it accordingly; he visited him again on the 3rd and 6th and finding no symptoms came to the conclusion that he had made an error in diagnosis and that the man was not suffering from scarlet fever. He accordingly gave permission to the patient, who was away from home, to return to his own residence. Medical evidence showed that Mr. Finney had taken great trouble in the case and emphasised the difficulty of diagnosing scarlet fever in its early stages, and the magistrates rightly dismissed the case.

LITERARY INTELLIGENCE.—Dr. John Brown's "Horæ Subsecivæ" in the small handy edition, met with so much success last Christmas that Messrs. Adam and Charles Black are getting ready for the coming Christmas a uniform edition of "Dr. John Brown and His Sisters," by E. T. M'Laren. It will contain an introduction by Dr. John Brown's brother, Professor Crum Brown, and will be illustrated with seven page family portraits and a photogravure frontispiece of Dr. John Brown.—Mr. Douglas Hall and Lord Albert Osborne have collaborated in a volume to be entitled "Sunshine and Surf" which will be published immediately by Messrs. Adam and Charles Black. It will contain their impressions of a year's wanderings in the South Sea Islands, and will be profusely illustrated.—Messrs. Rebman, Limited, announce the publication of the first three volumes of a "System of Physiologic Therapeutics," a practical exposition of the methods, other than drug-giving, useful in the treatment of the sick and in the prevention of disease, by English, American, French, and German authors and edited by Solomon Solis Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. The complete "System" will consist of 11 medium octavo volumes, the first three of which are now ready—viz., Vols. I. and II. devoted to "Electrotherapy" and Vol. III. comprising Book I. of a treatise on "Climatology, Health Resorts, and Mineral Springs." The remaining eight volumes of the series will be published at short intervals.—The same firm have also ready or are about to issue the following:—Vol. I. of a new work on the "Practice of Medicine," by Dr. Henry Walter Syers, of the Great Northern Central Hospital; a new edition of Dr. J. C. Thresh's "Water and Water Supplies"; a translation of Professor Dr. R. Greef's "Guide to the Microscopic Examination of the Eye," by Dr. Hugh Walker of Glasgow; Mr. E. Stanmore Bishop's new work on "Uterine Fibromyomata, their Pathology, Diagnosis, and Treatment"; the third edition of "The Pocket Formulary for the Treatment of Disease in Children," by Dr. L. Freyberger; a work by Dr. Henry Leffman and Dr. W. Beam on "Select Methods in Food Analysis"; Mr. Macleod Yearsley's translation of Professor A. Broca's monograph on the "Surgical Anatomy and Operative Surgery of the Middle Ear"; the first volume of Professor Hemmeter's new work on "Diseases of the Intestines"; an entirely new edition, rewritten and much enlarged, of Dr. Louis Starr's "Diseases of the Digestive Organs in Children"; and "A Manual of Bacteriology," by Dr. H. M. Williams of Buffalo.

HOME FOR INEBRIATES.—On Sept. 19th the Bishop of Ipswich opened a home for inebriate women at Hamond Lodge, Terrington, near King's Lynn. This home has been established by the Church of England Temperance Society and can receive 33 inmates.

THE Council of the South Wales and Monmouthshire University College, Cardiff, held a meeting on Sept. 18th, when it was resolved to advertise for a successor to the late Principal Viriamu Jones at a salary of £1000 per annum.

LONGEVITY.—John MacDone, who died recently in Ennislainin, Connemara, is said to have been born in 1776 He was twice married, and his second wife, who is now 78 years of age, survives him. Like many of the inhabitants of Connemara, the deceased spoke only Irish. There does not seem to be any proper evidence that he had attained the age alleged.

BRITISH MEDICAL BENEVOLENT FUND.—This fund, which has for its objects the affording of immediate pecuniary relief to distressed qualified members of the medical profession, their widows and orphans, and the granting of annuities to such after 60 years of age, has just issued its report for 1900. In the annuity department steady and satisfactory progress has been made. The capital has been increased by the purchase of £1600 Paisley Corporation 3 per cent. stock. The income from investments amounted to £2355 13*s.* 3*d.*, of which £2213 6*s.* 8*d.* have been paid away in annuities. During the year 16 vacancies were caused by death. The increase of income has enabled one new annuitant to be elected, so that the total number is now 111 as against 110 on last year's list. In the grant department the committee report that the subscriptions show an increase upon 1899, though the amount is still below that of 1898. The donations include two special gifts of 200 guineas and 100 guineas respectively. For the donation of 200 guineas the fund is indebted to the liberality of an old friend and previous benefactor, Mr. G. E. Rundle, F.R.C.S. Edin., of Looe, New South Wales. The donation of 100 guineas was a contribution from the president, Sir William Broadbent, who generously came to the rescue of the fund at a time when the balance available for grants had been reduced to less than £1. To both these donors the committee, in the report, tender grateful thanks. The grants actually paid in 1900 amounted to £1549. This sum was distributed among 165 cases, in amounts varying from £5 to £20.

NATIONAL REGISTRATION OF PLUMBERS.—The Lord Mayor of Birmingham, at a meeting of Master and Operative Plumbers held in the Council House on Sept. 17th, referred to the evils of bad plumbing which, he said, were great and far-reaching. In presenting a number of certificates granted in connexion with the National Registration of Plumbers he emphasised the importance of only duly qualified men being engaged in trades which were so closely identified with the health of the community. He said that it was gratifying to find that the reforms which were taking place in the trade were not forced upon them by outside pressure but arose from an almost spontaneous desire of the masters and men to uplift the trade and secure for it public confidence. A motion was proposed by Mr. Bellamy, master plumber, seconded by Mr. Clarke, operative plumber, affirming that in the opinion of the meeting, representing the master and operative plumbers of Birmingham and the district, it would be a great public advantage if a measure be passed through Parliament securing an efficient system of registration, and urging that it is the duty of the Government to carry through such a measure in the public interest. Dr. A. Hill, medical officer of health of Birmingham, referred to the action taken in Parliament with that object. The Lord Mayor observed that it was disappointing that Parliament was so tardy in giving attention to legislation that had common sense written over it.—At Eastbourne the Mayor recently presented certificates of registration to 21 master and operative plumbers who had qualified under the conditions applying to the National Registration of Plumbers.

ROYAL COMMISSION ON ARSENICAL POISONING.—The Royal Commission on Arsenical Poisoning due to beer containing glucose made with arsenical sulphuric acid will probably resume its sittings at Westminster in the middle of October.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. E. Rice Morgan, M.R.C.S. Eng., L.S.A., has been presented with an illuminated testimonial and a diamond ring by the inhabitants of Morriston, Swansea, and his friends on his return from a voyage round the world to recruit his health.

BEQUESTS AND DONATIONS TO HOSPITALS.—A bequest of £1000 has been made to the Royal Hants County Hospital by the late Marquis of Winchester who was killed in South Africa. About £5000 have been subscribed in response to a special appeal made by the hospital.—An anonymous donor has sent £1000 to the Friedenheim Hospital, Swiss Cottage, N.W., to endow a bed "in memory of John Thomas Emmett."

THE QUEEN'S JUBILEE INSTITUTE FOR NURSES.—On Sept. 21st a drawing-room meeting was held at East Cowes Castle to decide as to the best means of promoting the women's memorial to Queen Victoria, which is to take the form of endowing the late Queen's Jubilee Institute for Nurses. The meeting was held under the presidency of Lady Gort. Lady Adela Cochrane stated that the object of their gathering was to enlist the practical sympathy of the women of the Isle of Wight in the work, which was that of nursing the poorest of His Majesty's subjects in their own homes. The secretary stated that the Queen's nurses now numbered over 900, and reminded the meeting that the movement was founded by the late Queen in 1887, on which occasion Her Majesty contributed £70,000 from the women's Jubilee offering. It was decided to start a women's fund in the Isle of Wight.

A PROMISING CAREER has been cut short by the death at an early age of Mr. R. U. West who during his student days and also during a short period of actual practice had gained the warm esteem of both teachers and fellow students. Mr. West seemed well fitted to carry on the traditions of a family that had done much honourable service in the medical profession, his father, the late Mr. J. G. U. West, having been a highly respected practitioner in Stoke-upon-Trent and a member of the honorary staff of the North Staffordshire Infirmary, and his grandfather a well-known practitioner in Lincolnshire. Mr. West's death, which occurred on Sept. 3rd from enteric fever, contracted whilst acting as house surgeon to the Seamen's Hospital, Greenwich, was a cause of sincere grief to the members of the visiting staff who had much respect for him as an able, considerate, and loyal colleague.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Strand, W.C.
A Manual of Surgery for Students and Practitioners. By W. Rose, M.B., B.S. Lond., F.R.C.S., and A. Carless, M.S. Lond., F.R.C.S. Fourth edition. Price 21s.

BLACK, ADAM AND CHARLES, Soho-square, W.
Use-inheritance, Illustrated by the Direction of Hair on the Bodies of Animals. By Walter Kidd, M.D., F.Z.S. Price 2s. 6d.

FISCHER, GUSTAV, Jena.
Morbus Hungaricus. By Dr. Tiberius von Györy. Price 5 marks.
Der Ursprung der Syphilis. By Dr. Med. Iwan Bloch. Price 6 marks.

JOHN BALE, SONS, AND DANIELSSON, Limited, 83-89, Great Titchfield-street, W.
Motherhood. By Charles J. Glasson, M.D. Brux., M.R.C.S., L.R.C.P. Lond. Price 1s. 6d.

LONGMANS, GREEN, AND CO., Paternoster-row, E.C.
Memoirs and Letters of Sir James Paget. Edited by Stephen Paget, One of his Sons. Price not stated.
A Practical Guide to the Administration of Anæsthetics. By R. J. Probyn-Williams, M.D. Durh., &c. Price 4s. 6d.

MACMILLAN AND CO., Limited, London.
A Manual of Determinative Bacteriology. By Frederick D. Chester, Bacteriologist of the Delaware College Agricultural Experiment Stations, &c. Price 10s. 6d.

NEW YORK PATHOLOGICAL SOCIETY.
Proceedings for the Years 1899 and 1900. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.
International Directory of Laryngologists and Otologists. Compiled by Richard Lake, F.R.C.S. Eng. Second Edition, revised and enlarged. Price 5s.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, W.C.
Tendencies to Consumption: How to Counteract them. By J. D. E. Mortimer, M.B. Lond., F.R.C.S. Eng. Price 2s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

AHRENS, H. A., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory Acts for the Basingstoke District of Hampshire.

AITKEN, PETER, L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Bo'ness District of Linlithgowshire.

BEESLEY, ROBERT W., M.D., C.M., M.R.C.P. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Bolton Infirmary and Dispensary.

BEVAN, WILLIAM LL. P., M.D. Edin., has been re-appointed Medical Officer of Health of Alton, Hants.

BRYER, WILLIAM H., M.B., C.M. Edin., has been appointed Honorary Medical Officer to the Bolton Infirmary and Dispensary.

BUTT, FRANCIS J., M.B., C.M. Edin., has been appointed Medical Officer of Health of Hoole Urban District.

CRICHTON, DAVID, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Newtyle District of Forfarshire.

EASTERBROOK, A. M., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Gorebridge District of Midlothian.

GORDON, THOMAS E., M.D. Durh., M.R.C.S. Eng., has been appointed Medical Officer of Health of Towyn Urban District.

JOHNSON, H., L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of the South District of the Lincoln Union.

JOHNSON, WILLIAM CROSBY, M.B., Ch.B. Vict., has been appointed Junior House Surgeon to the Salford Royal Hospital.

MYLES, F. J., M.B., B.S. Dub., has been appointed a Medical Referee under the Workmen's Compensation Acts, 1897 and 1900, to act for the county of Longford, Ireland.

ROBERTSON, GEORGE, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Kirkpatrick Durham District of Kirkcudbrightshire.

RODGER, A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Yetholm District of the county of Roxburgh.

SCOTT, BERNARD, M.R.C.S. Eng., has been appointed Assistant Medical Officer of the West Bromwich Workhouse.

WILSON, WALTER R., M.B., B.C. Cantab., has been appointed Honorary Surgeon to the Doncaster Infirmary.

YOUNG, ARCHIBALD J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of the Whitefield Urban District.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with board and attendance.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100, with board and lodgings.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL, Church-street, Queen's-road, Brighton.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRISTOL GENERAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, residence, &c. Also Physician to the Skin Department; also a Physician and Assistant Physician.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £120 for the first year and £140 for the second year, with board, furnished rooms, coal, and light.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Physician to out-patients.

CHICHESTER INFIRMARY.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and washing.

COUNTY ASYLUM, Mickleover, Derby.—Senior Assistant Medical Officer. Salary £130, rising to £150 per annum, with apartments, board, washing, and attendance.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary £100, with board, residence, and washing.

ESSEX COUNTY ASYLUM, Brentwood.—Junior Assistant Medical Officer. Salary £140 per annum.

FARNBOROUGH URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £150 per annum.
GRAVESEND HOSPITAL.—House Surgeon. Salary £90 per annum, with board and residence.
HAMPSTEAD HOSPITAL, Parliament-hill, N.W.—Dental Surgeon.
HERTFORDSHIRE COUNTY ASYLUM, Hill End, St. Albans.—Junior Assistant Medical Officer, unmarried. Salary £160 a year, with board, furnished apartments, and washing.
HOSPITAL FOR WOMEN, Soho-square, W.—Assistant Physician.
KING'S COLLEGE, London. — General Pathology and Bacteriology, Demonstrator.
LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, board, and attendance.
LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Pathologist.
MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Medical Officer. Salary £180 per annum.
MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon.—Honorarium at rate of £50 per annum and board.
MIDLOTHIAN DISTRICT ASYLUM.—Assistant Medical Officer, single. Salary £200, with furnished rooms, board, washing, and attendance.
MONKWEARMOUTH AND SOUTHWICK HOSPITAL, Sunderland.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.
NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum, with furnished apartments, board, and washing.
NORTH WALES COUNTIES LUNATIC ASYLUM, Denbigh.—Second Assistant Medical Officer. Salary £120 per annum, rising to £160, with board, residence, and washing.
ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100, increasing by £10 a year, with board and apartments.
ROYAL SEA BATHING HOSPITAL, Margate.—Resident Surgeon. Salary £120 per annum, with board and residence.
ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £100 per annum, with board.
ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Curator of Museum and Assistant Pathologist. Salary £100 per annum.
SEAMEN'S HOSPITAL SOCIETY ("DREADNOUGHT"), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.
STAFFORDSHIRE GENERAL INFIRMARY, Stafford.—Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing.
STIRLING DISTRICT ASYLUM, Larbert, N.B.—Junior Assistant Medical Officer, Salary £100, with board, &c.
TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board, lodging, and washing.
VICTORIA HOSPITAL, FOLKESTONE.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.
VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W., and the VICTORIA CONVALESCENT HOME, Broadstairs.—House Physician for six months. Honorarium of £25, with board and lodging.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory Acts at Northleach, Gloucester, at Brixworth, Northampton, and at Ballylongford, County Kerry.

Births, Marriages, and Deaths.

BIRTHS.

BENSON.—On Sept. 17th, at Beachlands, Deal, the wife of Lieutenant-Colonel P. H. Benson, I.M.S. (Mysore), of a son.
DUNN.—On Sept. 19th, at Mildenhall, Suffolk, the wife of William Dunn, M.B., of a daughter.
HENDLEY.—On Sept. 18th, at Chail, Simla Hills, India, the wife of Major Harold Hendley, I.M.S., of a daughter.
INCE.—On the 31st August last, at Bloemendal, Mowbray, Cape Town, S.A., the wife of John Samuel Ince, only surviving son of Surgeon-Major John Ince, M.D., I.M.S. (retired), of Swanley, Kent, of a son.

MARRIAGES.

SCOTT—BAKER.—On Sept. 12th, at St. Stephen's Church, Paddington, by the Rev. L. Titley, Sydney Richard Scott, M.B. Lond., M.R.C.S., L.R.C.P. Lond., to Ethel, daughter of the late George Baker of Shrewsbury.
WILLCOX—GRIFFIN.—On August 29th, at Clapton, Northamptonshire, by the Rev. E. P. Williams-Freeman, rector, William Henry Willcox, M.B., B Sc. Lond., D.P.H., F.I.C., of St. Mary's Hospital, Paddington, W., to Mildred, elder daughter of William Griffin, Esq., of Clapton.

DEATHS.

ARCHER.—On Sept. 20th, at Upper Woburn-place, Francis Bonfield Archer, M.B., C.M., in his 54th year.
DOUGLAS.—On Sept. 13th, at Bellingdon-road, Chesham, James Richard Alexander Douglas, M.R.C.S., L.S.A., in his 83rd year.
MORAN.—On Sept. 20th, at Marylebone, W., Lieutenant-Colonel James Moran, M.D., I.M.S.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

QUERIES IN POOR-LAW ADMINISTRATION.

A CORRESPONDENT asks us the following questions:—Is a medical officer obliged to resign his appointment and accept his superannuation when 65 years of age? Has the chairman of guardians (being a J.P. residing in another parish six miles away) a right to direct the relieving officer of this parish to take all pauper lunatics into the workhouse (out of this parish) after receiving notice from the district medical officer? In answer to (1) the Superannuation Act states that an officer "*may* be superannuated when he reaches the age of 65 years." The guardians, therefore, may call upon their medical officer to take his superannuation the moment he reaches the age of 65 years, or they may retain his services for a further period if they think that he is still "capable of performing the duties with efficiency." The answer to (2) depends upon the chairman as a J.P. having jurisdiction or not in the parish where the lunatic resides. If he has he can, by Section 14 (3) of the Lunacy Act, require the relieving officer to bring the lunatic before him at such time and place as shall be appointed in his order, and the place may be the workhouse. The chairman and J.P. has no authority to give a general order to the relieving officer. He can only give the order upon receiving notice that a person is deemed to be a lunatic. See Section 14 (3). The relieving officer can remove without an order under Section 20. The extract from Section 14 (2)—"in the place where the pauper resides"—refers to the jurisdiction of the justice, not to the place where the pauper is to be taken.

THE CAPACITY OF THE URINARY BLADDER.

To the Editors of THE LANCET.

SIRS,—On July 24th last a primipara, aged 24 years, was delivered of a male child, stillborn. The child weighed 11 pounds, and the woman, who was very stout, carried it well forward. Nineteen hours after delivery over 50 ounces of urine were withdrawn with the catheter. On the following day the catheter was used twice, but subsequently the urine was passed in the natural manner, though with increased frequency. The patient was up before the tenth day and continued well, and remains so at the present date, the amount of urine retained being excessive with no impairment of function. This note is made by permission of Mr. F. Dymoke of Bristol.

I am, Sirs, yours faithfully,

University College, London, Sept. 11th, 1901. A. P. WALTERS.

*** The interest in Mr. Walters's note lies in the fact that there was no impairment of function, as the amount of urine drawn off is not very remarkable and has often been exceeded. The rapid recovery of the bladder in this instance is chiefly attributable to the patient's age. In older people atony is much more likely to follow over-distension.—ED. L.

THE BATTLE OF THE CLUBS.

WE learn that the post of surgeon to the Wanstead Foresters is at present vacant. The local practitioners have agreed among themselves to ask for a remuneration of 5*s.* per member per annum instead of 4*s.* A local medical man has been elected and the appointment offered to him at the old rate, which offer has been refused. The Foresters argue that all their courts in the eastern division of London pay but 4*s.* and they have therefore decided to look elsewhere for a surgeon. We need not reiterate all the reasons for medical men asking an increase in their salary. Suffice it to say that if working men's expenses have gone up so have those of medical men. But working men's wages have risen and it is only fair that the payments made to medical men should go up too. We are very glad that the practitioners of Wanstead are united, and can only urge any practitioners in the neighbourhood who may be approached to back up their professional brethren in their demands.

A "CONSCIENTIOUS OBJECTION."

ON Sept. 16th a labourer appeared before the magistrates at Thorpe, Essex, applying for a vaccination exemption certificate for his child, the reason given being that the child's grandmother had died after vaccination. It appeared that the grandmother had been vaccinated when a child. The certificate was granted by a majority of the magistrates, two of whom were opposed to it.

LOCUM-TENENTS' FEES.

To the Editors of THE LANCET.

SIRS,—Will you or any of your readers let me know how much a doubly-qualified man is entitled to if called away to work as a locum-tenent for less than a week without settling any terms? A medical student friend of mine asked me if I would work for a medical friend of his who wanted to go out for a change. I asked him the terms, to which he said that the medical man did not say anything about the terms in his letter or wire, and as there was hardly any time to lose asked me to leave town, assuring me that I would not be taken advantage of in

any way. Consequently I left town at a very short notice on Thursday and stayed till the following Wednesday morning. For this period I was paid 30s. including 7s. travelling expenses. I put the money in my pocket without looking at it, but when I found that it was 30s. I was very much surprised but thought it better not to say a word until I had seen this medical student. He still told me that the medical man did not say anything about the terms when engaging me and asked me to write to that gentleman. So I wrote and asked five guineas and travelling expenses, minus 30s. already received. In reply the medical man said that he had offered 30s. and thought that was quite enough. Under the circumstances, when he had no direct correspondence with me and the terms were not told to me by the medical student, how much am I entitled to and how should I proceed to realise it? Thanking you for the trouble in anticipation,

I am, Sirs, yours faithfully,

Sept. 23rd, 1901. LOCUM.

*** The remuneration is altogether inadequate. We do not know what our correspondent's legal remedy may be, as he accepted the post without arranging for his fee, but he will be ill-advised to act without consulting a solicitor.—ED. L.

"INSUFFICIENT LAVATORY ACCOMMODATION IN GIRLS' SCHOOLS."

To the Editors of THE LANCET.

SIRS,—The insufficiency of lavatory accommodation in girls' schools to which Mr. Hughes Davies has very properly drawn attention in THE LANCET (Sept. 21st, p. 825) is certainly a condition which ought not to be allowed to continue, but I fear it would not be practicable to effect a remedy in the manner he suggests, through the local sanitary authority and the medical officer of health. I think, however, that this is a question which might very well be dealt with by the Medical Officers of Schools' Association. If the association would issue a memorandum addressed to the principals of schools I am quite sure the cooperation of medical officers of health could be obtained to secure its distribution. The conditions described by Mr. Davies are not to be found in at least one school with which I am acquainted, where the girls breakfast at 7.30 A.M. and have no definite school duties until 9.30.

I am, Sirs, yours faithfully,

Hereford, Sept. 21st, 1901. HERBERT JONES, D.P.H. Camb.

"MEMBRANOUS COLITIS?"

To the Editors of THE LANCET.

SIRS,—In answer to your correspondent "Worried" in THE LANCET of Sept. 21st, p. 826, I can tell him that I have obtained refreshingly good results in some cases of membranous colitis by throwing to the winds commonly accepted theories—salol, &c.—indeed, disregarding the local conditions as compared with treating the individual as a whole—generally a neurotic. Rest, food, and warmth are, I venture to say, the common-sense weapons we have wherewith to combat suchlike complaints—they are simple-sounding but much more powerful than any drug. Mr. Bunsby once said: "The bearing of this observation lays in the application on it." One of the chief arts of the physician lies in arranging, adjusting, and dovetailing simple remedies, thereby giving the chance which the *vis medicatrix naturæ* is longing for.

I am, Sirs, yours faithfully,

Crouch End, N., Sept. 23rd, 1901. F. ORTON, M.D. Dub.

To the Editors of THE LANCET.

SIRS,—"Worried" will find an account of mucous and membranous colitis, &c., in the Encyclopædia Medica, vol. ii., under "Colon"; also further reference in the *Medical Chronicle* for August, 1901, under "Mucous Colitis." If Bright's disease and amyloid disease can be excluded I would suggest, after attention to the teeth, a diet including green vegetables—e.g., spinach, meat, and fat—but limited as to carbohydrates, and these well cooked. Warmth also is necessary in clothing, &c., a regular mode of life, and as much change to a bracing and socially congenial atmosphere as is attainable. In any case much patience and avoidance of over-drugging are necessary.

I am, Sirs, yours faithfully,

Sept. 23rd, 1901. T. C. B.

To the Editors of THE LANCET.

SIRS,—As a patient of mine has suffered since her return from India, where she had hill diarrhœa and peritonitis 25 years ago, from membranous colitis with symptoms similar to those of the patient cited by "Worried," I may be able to give some hints, and shall be very thankful if they prove of use. She has been better for the last 10 years than previously, though a very experienced Indian practitioner who saw her at her worst, which was about 1882, thought the thickening of the cæcum would probably increase gradually and produce a fatal result. At that time, even between the attacks, there was usually pain after food, especially if vegetables were taken, so that she had to live mainly on meat. Later on the vegetable that suited her best was beetroot, plain boiled. More recently she has been able to take vegetables, but *not meat*, which produces headache and scanty urine. (When she was a child she could not take meat.) Before an attack there is often a feeling of terror or impending disaster; this, however is not uncommon in abdominal maladies. The attacks seem to have reference to damp and to vegetation, being most frequent in spring and when the leaves fall. Indeed, I have always tried to get her away to the sea, especially to Brighton, at these times. The sea acts both as preventive and cure and is better than any drugs. I should say that the heart is affected. It is dilated and when she is ill there is sometimes a systolic apex bruit, but not always. Now, as to treatment. Bael, bismuth, arsenic, sulphate of copper, and iodine applications do little or no good. I manage the case somewhat as follows:—In a very acute attack of right iliac pain she keeps to bed or sofa with constant large, hot linseed poultices, taking as little food as possible—only Brand's jelly, &c. I order Dover's powder if there is blood in the slime and glycerine suppositories if necessary (enemata increasing the pain). When improving the yelk of an egg mixed with a teaspoonful of flour relieves diarrhœa. Resorcin, one or two grains in water, is very soothing, also useful in minor attacks, but tends to constipate if continued long and affects the heart. After an attack is over I find pernitrate of iron useful in strengthening the bowel. The pain, I think, is worst when the membrane has been shed, leaving a raw surface. By the time the membrane is passed the pain is often better. I am very doubtful about the desirability of giving aperients. I believe an attack has frequently been averted by a timely visit to Brighton, and after an acute attack I generally find that as soon as she is sufficiently recovered to be carried downstairs and put into a cab and from that into the train a fortnight there sets her up again in a marvellous manner. Brighton appears to be specially suitable from the absence of decaying vegetation. I shall be very happy to give "Worried" any further information privately.

I am, Sirs, yours truly,

Woolwich Common, Sept. 21st, 1901. THEODORE MAXWELL.

ORGANO-THERAPY 170 YEARS AGO.

IN our issue of July 13th, p. 94, we gave some examples of prescriptions by thirteenth-century practitioners of the school of Salerno, and more recently we noted that mandrakes still have a sale; but the following prescriptions which were published in 1731 show a degree of credulity hardly to be expected from "the father of modern chemistry and brother of the Earl of Cork." The book is said to be written by "The Honourable R. Boyle, Esq., late Fellow of the Royal Society," for the benefit of "those poor Upholders of Families who cannot find or fee a Surgeon or a Doctor." Here are a few specimens:—

FOR THE DYSENTERY.

Take *Pigs-Dung*, dry it, and burn it to grey (not white) Ashes; of these give about half a Dram for a Dose, drinking after them about three spoonfuls of Wine Vinegar.

FOR CONVULSIONS, ESPECIALLY IN CHILDREN.

Take *Earth-Worms*, wash them well in White-wine to cleanse them, but so as that they may not die in the Wine: Then upon hollow Tiles, or between them, dry the Worms with a moderate Heat, and no further than that they may be conveniently reduced to Powder; to one Ounce of which add a pretty Number of Grains of *Ambergrise*, both to perfume the Powder, (whose Scent of itself is rank) and to make the medicine the more efficacious.

TO PREVENT THE TOOTH-ACH, AND KEEP THE TEETH SOUND.

Let the Patient frequently rub his Teeth moderately with the Ashes that remain in *Tobacco-Pipes*, after the rest of the Body hath been consumed in Smoak; some time after, washing (if need be) his Mouth with fair Water not too cold.

FOR OBSTRUCTIONS, AND DIVERS DISEASES PROCEEDING THENCE.

Let the Patient drink, every Morning fasting, a moderate Draught of his own *Urine* newly made, and (if it can conveniently be) whilst 'tis yet warm, forbearing Food for an Hour or two after it.

AN UNCOMMON BUT EXPERIENC'D REMEDY FOR DYSENTERICAL FLUXES.

Take the Bone of the Thigh of a hang'd Man (perhaps another may serve), calcine it to Whiteness, and having purg'd the Patient with an Antimonial Medicine, give him 1 Dram of this white Powder for one Dose, in some good Cordial, whether Conserve or Liquor.

A CHOICE EXTERNAL REMEDY FOR A SORE THROAT.

Take *Millepedes*, Sows or Hogs Lice alive, and sew them up between the Foldings of a piece of Linnen, and apply them to the Throat in the form of a Stay, which is to be kept on all Night.

FOR AN AGUE.

Take of the Bone called *Patella*, of the Knee of a dead Man, and having reduced it to fine Powder, give of it as much as will lie upon a groat or a six-pence for one Dose, in any proper Conserve, or fit Vehicle. E. T. A.

"PRESERVING THE ELASTICITY OF INDIARUBBER."

To the Editors of THE LANCET.

SIRS,—The following hints may be useful to your correspondent Dr. Richards (THE LANCET, Sept. 21st, p. 828). I am indebted to the manager of a rubber factory for them. Rubber goods should be kept in a temperature that does not fall below 60° F. (I keep mine in a cupboard at the back of which the kitchen chimney ascends). Tubes and tubular goods should be hung up or laid on a shelf carefully coiled, free from bends, kinks, or pressure. Rubber sheeting should be rolled on a stick, not folded. Water-bottles, air-beds, pillows, &c., should be slightly inflated with air and be thoroughly dry before being put away. Two or three days' exposure in a temperature of 70° F. will soften rubber articles that have become hard.

I am, Sirs, yours faithfully,

Sept. 23rd, 1901. EXPERIENCE.

M.D., D.P.H. Aberd.—We are obliged for the information. We cannot, of course, always tell what an advertisement may really mean. We do not accept advertisements from medical aid societies the management of which is not, in our opinion, proper, but sometimes an advertisement of this character will get into our columns because on the face of it it is innocent.

F. W. A.—The advertisement is presumably inserted by the house agent and not by the medical man in question. If his attention were called to it we are sure that he would be the first to insist upon its withdrawal.

During the week marked copies of the following newspapers have been received:—*Yorkshire Post, Kent and Sussex Courier, Mining Journal, Rochester and Chatham Journal, South African News, Leeds Mercury, Coventry Standard, Windsor and Eton Express, Reading Mercury, Liverpool Daily Post, Local Government Journal, Lancaster Observer, Bristol Mercury, The Times, Southwark and Bermondsey Recorder and South London Gazette, South London Chronicle, Epsom Herald, Surrey Advertiser, Dorking Advertiser and County Post, Essex Telegraph, Essex County Standard, Hertfordshire Mercury, &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 26th, 1901.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Sept. 20	29·49	S.W.	...	96	66	56	54	63	Cloudy
,, 21	29·42	S.W.	0·39	83	66	60	60	62	Overcast
,, 22	29·62	S.	...	111	68	56	61	62	Hazy
,, 23	29·50	S.E.	...	92	66	61	60	62	Overcast
,, 24	29·82	S.	...	90	68	57	58	60	Hazy
,, 25	29·87	N.E.	...	81	67	57	58	59	Foggy
,, 26	30·04	N.	...	104	69	54	57	59	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.)

SATURDAY (5th).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (2nd).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Lewers, Dr. H. Spencer, and others. Paper:—Dr. Herman: Leukæmia and Pregnancy.

FRIDAY (4th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—8.30 P.M. Mr. A. Cooper (President): Inaugural Address.

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal West Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Clinical Evening. Dr. Toogood: Cases from Lewisham Infirmary.—Dr. Scholefield: Clinical Cases.—Dr. Dockrell: Dermatological Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.)

TUESDAY (1st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Clinique. (Medical.)

WEDNESDAY (2nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Harrison: Clinique. (Surgical.)

THURSDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

FRIDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. H. Tilley: Clinique. (Throat.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1901 are on sale. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also on sale. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Office, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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U.—University College, Bristol, Secretary of.

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Letters, each with enclosure, are also acknowledged from—

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